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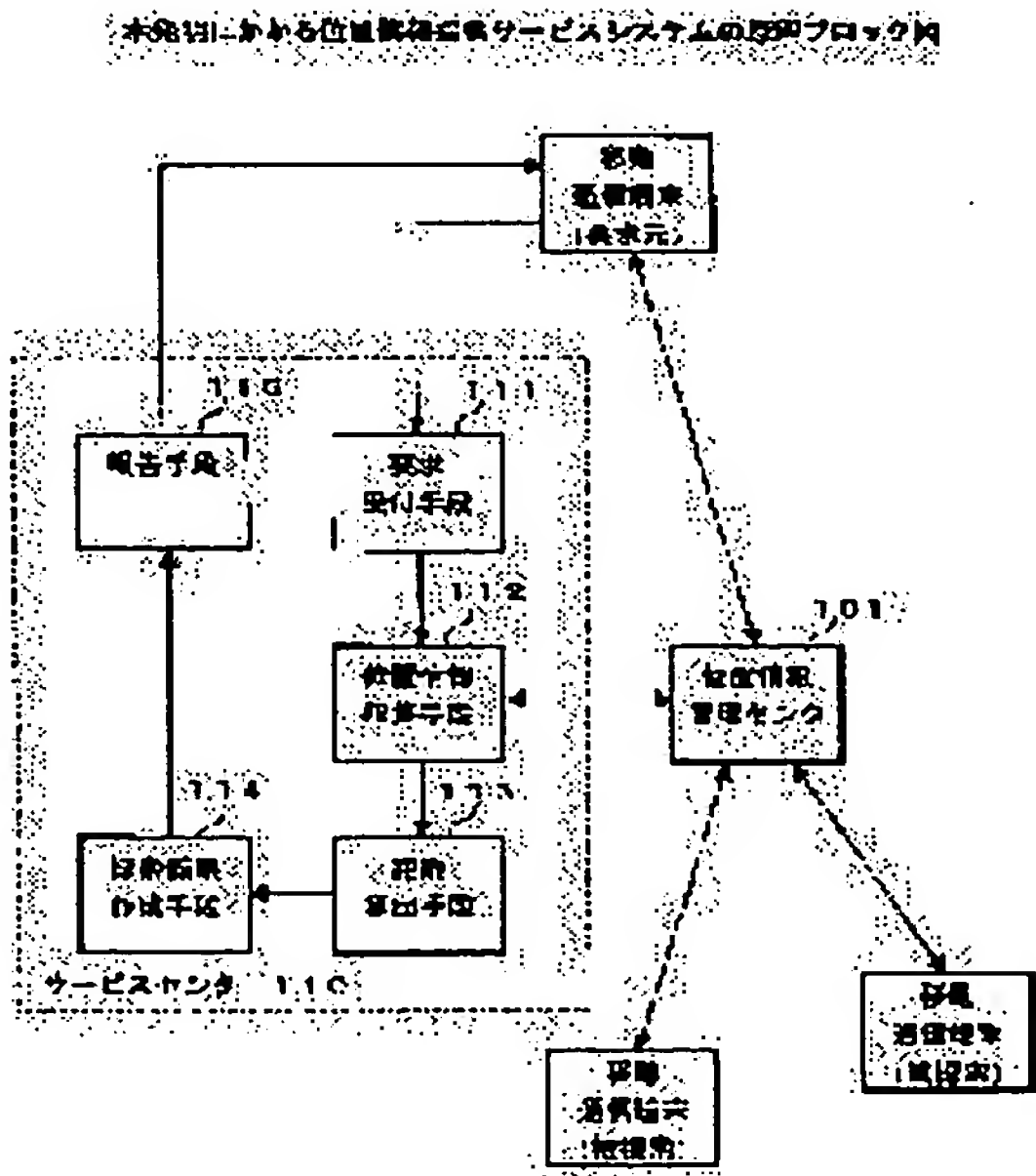
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(54) POSITION INFORMATION PROVIDING SERVICE SYSTEM AND MOBILE COMMUNICATION TERMINAL

(57)Abstract:  
PROBLEM TO BE SOLVED: To provide a position information providing service system that allows a user utilizing a mobile communication terminal to receive information as to whether or not other desirable user is resident in the vicinity of the user.

SOLUTION: In the position information providing service system that provides information as to whether or not other designated user is resident in the vicinity of the user in response to a request to a service center 110, the service center 110 includes; a request reception means 111 for receiving required information from the user being a requester; a position information collection means 112 for collecting proper position information from a position information management center 101 on the basis of the information received by the request reception means 111; a distance calculation means 113 for calculating respective distances from the requester user and users of searching objects on the basis of the collected position information; a searching result generating means 114 for generating a searching result on the basis of the distances calculated by the distance calculation means 113; and a report means 115 for transmitting the produced searching result to the requester user.



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## CLAIMS

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### [Claim(s)]

[Claim 1] In the positional information offer service system which offers the information about whether there is other at least one user specified by said user near said user according to the demand to a service center from a user Said service center detects the predetermined demand message of the purport which requires a location information service. A demand reception means to receive the identification information which shows a user's migration communication terminal which should be made for [ which show the migration communication terminal of a user to this user of the demand origin which sent said demand message / identification information and for / of at least one person / retrieval ], A positional information collection means to collect by asking a positional information management center a user's positional information which should be made the user of said demand origin, and applicable [ said ] to retrieval based on the information which said demand reception means received, A distance calculation means to compute distance with each user who should consider as the user of said demand origin, and said object for retrieval based on the positional information collected by said positional information collection means, A retrieval result creation means to create the retrieval result which shows whether there are these users near the user of said demand origin based on the distance computed about each user who should consider as said object for retrieval with said distance calculation means, The positional information offer service system characterized by having a report means to transmit the retrieval result created by said retrieval result creation means to the user of said demand origin.

[Claim 2] It responds to the input of the selection directions including the information which shows the person who should consider as the object for retrieval in the migration communication terminal equipped with the address book and the display means. An object information extract means to extract the object information containing the identification information of the migration communication terminal corresponding to the person shown with said selection directions from the address book with which the interior of said migration communication terminal was equipped, The predetermined demand message of the purport which detects the predetermined actuation by the user and requires a location information service, A retrieval demand means to send out the identification information which shows self, and the object information extracted by said object information extract means to a service center, An information reception means to receive the positional information offered from said service center as a response to said predetermined demand message, The migration communication terminal characterized by having a retrieval result display means to display the retrieval result which shows whether there is any person who considers as said object for retrieval near based on the positional information which said

information reception means received through said display means.

[Claim 3] The acceptance list holding the authorization information containing the identification information which shows the person to whom retrieval of positional information is permitted in the migration communication terminal equipped with the non-singing arrival function, An inquiry receiving means to receive the inquiry message containing the identification information which carries out non-singing arrival according to the call from a service center, and shows a retrieval client, By the collating result by collating means to collate the identification information contained in said inquiry message, and the authorization information held at said acceptance list, and said collating means The migration communication terminal characterized by having an acceptance response means to return the response message of the purport to which retrieval is permitted to said service center when [ the identification information which shows said retrieval client ] in agreement with one of the elements of authorization information.

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[Translation done.]

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the migration communication terminal corresponding to the positional information service system which provides the user of migration communication terminals, such as a cellular phone and PHS, with the information about a desired user's location, and this positional information offer service system using the function of a migration communication network system. In connection with the user of migration communication terminals, such as a cellular phone and PHS, having increased, various services in alignment with want of a variety of users are needed.

[0002] A location information service is service which offers the information depending on the location of the terminal while people and the car which are carrying the terminal are moving, and it is expected that need will expand completely especially the service about the information about room of those who are walking the inside of a service area from now on. In recent years, since it has been established that the user is always carrying a cellular phone, PHS, etc., the user of a cellular phone is the point to which he went, and the inclination to act considering the ability to contact other users as a premise has appeared. Especially, this inclination is remarkable in the user in the younger age group. For this reason, service which offers the information about a user's location, such as looking for the friend who is near himself as service for the users in the younger age group, is desired.

[0003]

[Description of the Prior Art] There is service currently called location monitoring service as an example of the service which offers the information about the location of the user of a migration communication terminal. This service makes a wandering old man, a child, etc. carry a specific migration communication terminal, pursues the location of this migration communication terminal, and reports that location to at any time. With such location monitoring service, beforehand, a person, a car, etc. for a trace are registered into the service center according to the request from the user of service, the exact location of the migration communication terminal for a trace is pinpointed using GPS etc., and it reports in many cases by transmitting to service's of a map personal computer and facsimile of a user which plotted the location.

[0004] Moreover, there is also service which can receive a desired message from the message registered into the message board selectively by using distance with a user as a key like "short-distance friend service" currently offered by TNet. With this service, in case a message is registered into a message board, a message board service system receives a user's positional information with a message, and registers this positional information corresponding to the



message. Moreover, when the user who is going to receive service accesses a message board, a message board service system chooses the message registered into the message board with the positional information of the user for service in the input of the distance which shows the retrieval range corresponding to the positional information which exists within reception and the specified distance, and transmits it to a user.

[0005] Moreover, the technique for providing JP,2000-209640,A with "the personal handy phone with a positional information acknowledgement function and the personal handy phone system" as information about the location of another PHS terminal which can notify room of a partner's PHS terminal, the distance of two PHS terminals, and fluctuation of the distance through a PHS terminal is indicated.

[0006] When positional information is collected periodically, the user of service specifies a registered partner terminal and a service center asks positional information about the PHS terminal registered as a partner terminal of the PHS terminals registered as a user of service, and these PHS terminals, this technique creates the demanded information based on the positional information collected to the service center, and returns it to a user's PHS terminal.

[0007]

[Problem(s) to be Solved by the Invention] Since the location monitoring service mentioned above is premised on the user who receives service checking the location of a specific individual or a specific car, it is necessary to register beforehand the object which pursues a location. Moreover, since information was offered as an image data in order to report the man for a trace, and the location of a car to accuracy and a personal computer, facsimile apparatus, etc. were indispensable in order to receive informational offer, it was lacking in portability.

[0008] Moreover, since "short-distance friend service" is service on extension of message board service to the last, the range which can be searched will be restricted to the terminal of the user who left the message to the message board. Since it is the service which, as for a message board, many and unspecified users can leave a message freely on the other hand, many messages may be transmitted to a user irrespective of the existence of relation with the user for service only by choosing a message based on distance.

[0009] On the other hand, in order that the technique of JP,2000-209640,A may offer service, the service center is collecting the information about the location of these PHS terminals periodically about a user's PHS terminal and partner terminal for service which were registered beforehand. For this reason, in order to collect the positional information mentioned above, the service center needed to access frequently the base station management equipment which manages a base station via the network, and may have increased network traffic. Moreover, the partner terminal which can receive offer of positional information was fixed by the registered information the top where the activity which registers information required for service beforehand is complicated for a user. Furthermore, since the positional information of the partner terminal for which the user for service is going to look will be collected automatically in a service center, the alternative of refusing retrieval was not prepared for the user of the terminal of a searched side. That is, it was not able to be said to the privacy of the user of a searched side that sufficient consideration was carried out.

[0010] Let this invention be the offering-migration communication terminal for receiving offer of positional information offer service system [ which offers the information about whether the user of other requests of a user is in near ], and this service using migration communication terminals, such as cellular phone, object.

[0011]

[Means for Solving the Problem] The principle block diagram of the positional information offer service system of this invention is shown in drawing 1 . In the positional information offer service system which offers the information about whether invention of claim 1 requires other at least one user specified by the user near a user according to the demand to a service center 110 from a user A service center 110 detects the predetermined demand message of the purport which requires a location information service. A demand reception means 111 to receive the identification information which shows a user's migration communication terminal which should be made for [ which show the migration communication terminal of a user to this user of the demand origin which sent the demand message / identification information and for / of at least one person / retrieval ], A positional information collection means 112 to collect by asking the positional information management center 101 a user's positional information which should be made the user of a requiring agency, and applicable to retrieval based on the information which the demand reception means 111 received, A distance calculation means 113 to compute distance with each user who should consider as the user of a requiring agency, and the object for retrieval based on the positional information collected by the positional information collection means 112, A retrieval result creation means 114 to create the retrieval result these users indicate it to be whether it is near the user of a requiring agency based on the distance computed about each user who should consider as the object for retrieval with the distance calculation means 113, It is characterized by having a report means 115 to transmit the retrieval result created by the retrieval result creation means 114 to the user of a requiring agency.

[0012] Invention of claim 1 can provide the user of the migration communication terminal of a requiring agency with the positional information mentioned later, when each above-mentioned means operates as follows. When the predetermined demand message sent out by the migration communication terminal of a requiring agency is received, the demand reception means 111 of a service center 110 exchanges information between the migration communication terminals of this demand origin, in addition to the identification information of this migration communication terminal, receives the identification information of other migration communication terminals which should be made applicable to retrieval, and passes it to the positional information collection means 112. The positional information collection means 112 requires the information about the location of the migration communication terminal of a requiring agency, and each migration communication terminal for [ which was specified ] retrieval from the positional information management center 101 based on the information received from the demand reception means 111. The positional information returned from the positional information management center 101 according to this demand is passed to the distance calculation means 113 through this positional information collection means 112, and the distance of the migration communication terminal of a requiring agency and each migration communication terminal for retrieval is computed based on such positional information. Thus, it judges whether based on the computed distance, the retrieval result creation means 114 exists near the migration communication terminal of migration communication terminal's for retrieval demand origin by comparing the distance corresponding to the migration communication terminal for example, for retrieval with a predetermined distance, the retrieval result which shows this judgment result is created, and it sends out to the migration communication terminal of a requiring agency through the report means 115.

[0013] Thus, according to the positional information offer service system of claim 1, when other migration communication terminals for which the user of this migration communication terminal asks search for whether it exists near the migration communication terminal of a requiring

agency and return that result to the migration communication terminal of a requiring agency according to the demand from a migration communication terminal, the user of a requiring agency can be provided with desired positional information.

[0014] The principle block diagram of the positional information offer service system which starts this invention at drawing 2 is shown. As shown in drawing 2, it sets to a positional information offer service system according to claim 1. As opposed to each user who should consider as the object for retrieval based on the information received as information which shows the user to whom the demand reception means 111 should make the positional information collection means 112 applicable to retrieval from the user of a requiring agency About the user by whom accepting retrieval with an acceptance check means 121 to check whether retrieval is accepted or not, and the acceptance check means 121 was checked, and the user of a requiring agency The inquiry management tool 122 which asks the positional information management center 101 positional information, and presents processing of the distance calculation means 113 with the acquired positional information may be had and constituted.

[0015] A location information service can be employed in such a positional information offer service system of a configuration, each means mentioned above reflecting the intention of the user of the migration communication terminal specified by the user of a requiring agency by operating as follows. In the positional information collection means 112, the acceptance check means 121 each checks a user's intention through each migration communication terminal, after calling the corresponding migration communication terminal based on the identification information of the migration communication terminal for [ the demand reception means 111 was indicated to be using the information received from the migration communication terminal of a requiring agency ] retrieval, respectively. These check results are passed to the inquiry management tool 122, and the inquiry to the positional information management center 101 is published by the inquiry management tool 122 only about the migration communication terminal from which the check result of the purport which accepts retrieval was obtained. Therefore, the positional information passed to the distance calculation means 113 from the inquiry management tool 122 includes only the information about the location of the migration communication terminal of the user by whom the purport which was mentioned above, and which accepts and accepts retrieval with the check means 121 was checked. Therefore, each user specified by the user of a requiring agency as an object for retrieval is having the intention to have shown acceptance of retrieval reflected by the retrieval result created based on the positional information acquired by doing in this way.

[0016] Furthermore, as shown in drawing 2, the migration communication terminal 102 of each user who should make the acceptance check means 121 applicable to retrieval is called. A call means 123 to perform processing for a voice call between each migration communication terminal 102 through a network, A voice sending-out means 124 to send out the predetermined voice-told message which urges actuation required in order to check whether retrieval is accepted or not to the migration communication terminal 102 called by the call means 123 to a user, Based on the response returned from each migration communication terminal 102 called by the call means 123, a response judging means 125 to judge whether the user of each migration communication terminal 102 accepts retrieval may be had and constituted.

[0017] Thus, the volition of the user for retrieval can be checked about whether the user of each migration communication terminal specified by the user of a requiring agency by operating so that each [ which was constituted / which accepted and mentioned the check means 121



above ] means may mention later is notified of being set as the object of retrieval by the location information service, and this retrieval is accepted.

[0018] In the acceptance check means 121, after calling the migration communication terminal as which the call means 123 was specified as an object for retrieval based on each received identification information, the voice sending-out means 124 sends out a predetermined voice-told message to the speech path established by the call means 123. This voice-told message is sent to the migration communication terminal (one [ namely, ] of the migration communication terminals specified as an object for retrieval) called through the network, and, thereby, this voice-told message reaches the user of this migration communication terminal. Then, when the call means 123 received and carries out a response from the migration communication terminal which counters through the speech path mentioned above, based on that response, the user for retrieval judges the intention to have shown acceptance of retrieval, and the response judging means 125 asks this judgment result, and notifies it to a management tool 122.

[0019] The response which shows the volition with the user clear as a response for retrieval to the voice-told message mentioned above by having such an acceptance check means 121 to the service center 110 which manages a location information service is collectable. The principle block diagram of the positional information offer service system in connection with this invention is shown in drawing 3 .

[0020] Furthermore, as shown in drawing 3 , the acceptance check means 121 is accessed through a network at each user's migration communication terminal 102 which should be made applicable to retrieval. An authorization information gathering means 126 to collect the authorization information which shows the user who is held at each migration communication terminal 102, and permits retrieval, It judges whether about the authorization information corresponding to each user who should consider as the object for retrieval, the identification information which shows the user of a requiring agency is contained. The user corresponding to the authorization information in which the identification information which shows the user of a requiring agency is contained may have and constitute an acceptance judging means 127 to judge with the retrieval from the user of a requiring agency being accepted.

[0021] Thus, the intention of the user for retrieval can be checked based on the information automatically collected by operating so that each [ which was constituted / which accepted and mentioned the check means 121 above ] means may mention later. the identification information which received the authorization information gathering means 126 from the demand reception means 111 in the acceptance check means 121 -- being based -- for example, the migration communication terminal 102 for retrieval -- authorization information is received by calling each by non-singing from the migration communication terminal 102 which accessed the migration communication terminal 102 and answered. on the other hand, the acceptance judging means 127 collates the identification information which shows the user of the demand origin received from the demand reception means 111, and the authorization information corresponding to each migration communication terminal 102 for retrieval -- the migration communication terminal 102 for retrieval -- it is alike, respectively and a corresponding user's intention is checked.

[0022] Here, authorization information can reflect that intention in the retrieval processing by the location information service automatically, without troubling the user specified as an object for retrieval when he collected these authorization information and judged a user's intention based on this authorization information, since the user of the migration communication terminal for retrieval was reflecting the intention to have shown acceptance of retrieval.

[0023] The principle block of the migration communication terminal in connection with this

invention is shown in drawing 4 . In the migration communication terminal which invention of claim 2 equipped with the address book 103 and the display means 104 According to the input of the selection directions including the information which shows the person who should consider as the object for retrieval, from the address book 103 with which the interior of a migration communication terminal was equipped An object information extract means 131 to extract the object information containing the identification information of the migration communication terminal corresponding to the person shown with selection directions, The predetermined demand message of the purport which detects the predetermined actuation by the user and requires a location information service, A retrieval demand means 132 to send out the identification information which shows self, and the object information extracted by the object information extract means 131 to a service center 110, An information reception means 133 to receive the positional information offered from a service center 110 as a response to a predetermined demand message, It is characterized by having a retrieval result display means 134 to display the retrieval result which shows whether there is any person who considers as the object for retrieval near based on the positional information which the information reception means 133 received through the display means 104.

[0024] Invention of claim 2 can receive offer of the positional information which shows whether a desired user's (for example, friend) migration communication terminal exists near itself based on the information registered into the address book 103, when it operates, as each means mentioned above mentions later. In this migration communication terminal, the object information extracted by the object information extract means 131 is sent to a service center 110 with the identification information of a demand message and self by the retrieval demand means 132. Then, when the information reception means 133 receives positional information from a service center 110, the retrieval result display means 134 displays the retrieval result expressed with this positional information through the display means 104, and provides a user with it.

[0025] Furthermore, Group List 135 holding the information which shows the response relation between the information which shows the person who belongs the object information extract means 131 to a group for every group [ at least ] as shown in drawing 4 , and the information registered into the address book 103, A group designation means 136 to choose either of the groups who was held at Group List 135 based on the selection directions inputted, The information registered into the address book 103 corresponding to the person belonging to the group chosen by the group designation means 136 may be read, and a read-out means 137 to output as object information may be had and constituted.

[0026] Thus, the constituted object information extract means 131 can extract easily the object information corresponding to a set of a desired person from the information registered into the address book 103 by operating so that each means mentioned above may mention later. In the object information extract means 131, since response relation with the information registered into the person belonging to each group and the address book 103 is held, if one of groups is chosen by the group designation means 136, based on the information held at Group List 135 corresponding to this group, suitable information will be read from an address book 103 to Group List 135 by the read-out means 137.

[0027] Therefore, actuation required in order that the user using the migration communication terminal equipped with such an object information extract means 131 may specify the person who is going to search by the location information service is only simple actuation which chooses from two or more groups the group in whom the desired person is included. The principle block diagram of the migration communication terminal which starts this invention at

drawing 5 is shown.

[0028] In the migration communication terminal which invention of claim 3 equipped with the non-singing arrival function The acceptance list 141 holding the authorization information containing the identification information which shows the person to whom retrieval of positional information is permitted, An inquiry receiving means 142 to receive the inquiry message containing the identification information which carries out non-singing arrival according to the call from a service center 110, and shows a retrieval client, By the collating result by collating means 143 to collate the identification information contained in an inquiry message, and the authorization information held at the acceptance list 141, and the collating means 143 When [ the identification information which shows a retrieval client ] in agreement with one of the elements of authorization information, it is characterized by having an acceptance response means 144 to return the response message of the purport to which retrieval is permitted to a service center 110.

[0029] Invention of claim 3 can return a suitable response automatically to the inquiry from a service center 110 by operating so that each means mentioned above may state below based on the authorization information prepared beforehand. The authorization information held at the acceptance list 141 is collated with the identification information which shows the retrieval client whom the inquiry receiving means 142 received with the collating means 143. If retrieval by the location information service may be permitted, since the identification information contained in this authorization information shows the person whom the user of a migration communication terminal considers, it can judge whether based on this collating result, the retrieval client is contained in the set of a person considered that the user of this migration communication terminal may permit retrieval. Therefore, the response in which the acceptance response means 144 reflected a user's intention by returning a response message to a service center 110 according to the collating result of the purport whose identification information which shows a retrieval client corresponded with one of the elements of authorization information can be automatically returned to a service center 110.

[0030] As shown in drawing 5 , in addition to each means mentioned above, the predetermined actuation by the user is detected. A selection means 145 to choose whether retrieval of the positional information by the location information service is refused temporarily, or acceptance is resumed according to predetermined actuation, When refusing retrieval of positional information temporarily with the selection means 145 is chosen, it may have the response control means 146 which forbids temporarily the response to a service center 110 from the acceptance response means 144, and a migration communication terminal may be constituted.

[0031] Thus, in the constituted migration communication terminal, retrieval by the location-based service is temporarily refusible according to the predetermined actuation by the user. If refusing retrieval by the location-based service temporarily with the selection means 145 shown in drawing 5 according to the predetermined actuation by the user is chosen, the response control means 146 will forbid temporarily transmission of the response message by the acceptance response means 144. Therefore, the user of the migration communication terminal constituted in this way can return the response of the purport which refuses acceptance automatically to the automatic acceptance check performed by the service center 110 by performing suitable actuation if needed.

[0032]

[Embodiment of the Invention] Hereafter, the operation gestalt of this invention is explained to a detail based on a drawing. The 1st operation gestalt of the positional information offer service



system which starts this invention at drawing 6 is shown. In the positional information offer service system shown in drawing 6, the migration communication terminal 210 is a migration communication terminal of the demand origin which requires application of a location information service. The migration communication terminal 210 of this demand origin, a service center 220, and other migration communication terminals 230a, 230b, and 230c shown in drawing 6 are equipped with the function which communicates mutually through a mobile network. Moreover, in addition to the communications processing section 222, this service center 220 is equipped with the data communication processing section (not shown), and it is possible to exchange information among the positional information centers 201, such as a positioning center using the home location register (HLR) which has managed the information which shows the base station where a migration communication terminal can communicate, or GPS.

[0033] Here, since the area which one base station covers in PHS with many users in the younger age group is narrow, it is possible by using HLR as a positional information center to perform retrieval which is equal to practical use. On the other hand, since precision sufficient in the positional information accumulated in HLR is not acquired in a cellular phone, it is desirable to receive offer of positional information with a high precision measured by the positioning center using GPS. In addition, the time and effort which acquisition of positional information takes is substantially reducible by building a positional information offer service system on the assumption that the unification platform for the service which offers positional information like DLP (DoCoMo Location Platform) which NTT DoCoMo offers in the case of which.

[0034] In addition to the radiocommunication processing section 211, the address book 212, and the display 213, the migration communication terminal 210 of the demand origin shown in drawing 6 is equipped with the service processing section 214. In this service processing section 214, the service request control section 215 controls actuation of these each part according to the directions inputted by the user by inputting the respectively suitable directions for the group information extract section 216, the demand messaging section 217, and the retrieval information extract section 218. The demand messaging section 217 shown in drawing 6 sends out a predetermined demand message to a service center 220 through the radiocommunication processing section 211 according to the directions from the service request control section 215. Moreover, according to the directions from the service request control section 215, the group information extract section 216 extracts the identification information which shows the migration communication terminal belonging to the group specified with these directions from an address book 212, and sends out group information which consists of extracted identification information to a service center 220 through the radiocommunication processing section 211. On the other hand, the retrieval information extract section 218 shown in drawing 6 is extracted out of the data with which the radiocommunication processing section 211 received the retrieval information corresponding to group information mentioned above from the service center 220, and is passed to the indicative-data creation section 219. The indicative-data creation section 219 creates the indicative data for displaying this retrieval information by the display 213, and presents processing of a display 213 with this indicative data.

[0035] On the other hand, in the service center 220 shown in drawing 6, the demand reception section 221 receives the demand message received by the communications processing section 222, and notifies information required for the service control section 223. According to this advice, the service control section 223 directs the purport which performs retrieval processing later mentioned to the retrieval processing section 225 according to the check result which directed activation of the check processing later mentioned in the check processing section 224,



and was notified from this check processing section 224. The check processing section 224 shown in drawing 6 exchanges information through the communications processing section 222 between the migration communication terminals specified with the directions from the service control section 223, and it checks whether the user of these migration communication terminals accepts retrieval by the location information service. Moreover, the retrieval processing section 225 performs a required inquiry to the positional-information center 201, creates the retrieval information which shows physical relationship with the migration communication terminal specified as for [ of a requiring agency / the migration communication terminal 210 and for retrieval ] based on the directions from the service control section 223 based on the information received from the positional-information center 201, and sends out this retrieval information to the migration communication terminal 210 of a requiring agency through the communications-processing section 222.

[0036] The detail configuration of a service center is shown in drawing 7. In the demand reception section 221 shown in drawing 7, the demand detecting element 231 detects a predetermined demand message out of the data received by the communications processing section 222 when a service center 220 was called by the user, and when it detects, it notifies that to the reception processing section 232. After the reception processing section 232 performs suitable authentication processing based on the identification information of the migration communication terminal 210 of a sending agency according to this advice, the inquiry about the object for retrieval is performed to the migration communication terminal 210 of a sending agency, and group information which specifies the migration communication terminal which should be made applicable to retrieval from this migration communication terminal 210 is received. Group information which this reception processing section 232 received is passed to the service control section 223 with the advice of a purport which received the demand to a location information service from the migration communication terminal 210 of a sending agency.

[0037] Moreover, in the check processing section 224 shown in drawing 7, whenever the voice messaging section 233 receives directions of the purport which performs check processing from the service control section 223, it sends out the predetermined voice-told message after calling the migration communication terminal shown by the identification information specified with each directions using the function of the communications processing section 222. On the other hand, the response detecting element 234 detects a predetermined response out of the data which the communications processing section 222 received, accepts a detection result, and notifies it to the judgment section 235. This acceptance judging section 235 judges whether it is the no which showed the volition in which the user shown by the identification information specified with each directions mentioned above accepts retrieval by the location information service based on the detection result notified from the response detecting element 234, and notifies this judgment result to the service control section 223.

[0038] moreover, the retrieval processing section 225 shown in drawing 7 -- setting -- the inquiry issuance section 236 -- the service control section 223 to a group -- the inquiry about the current position of a migration communication terminal shown by reception and such identification information in identification information is created, it publishes to the positional information center 201, and the positional information returned from the positional information center 201 is passed to the distance calculation section 237. Based on the positional information passed from the inquiry issuance section 236, the distance calculation section 237 finds the distance between the migration communication terminal 210 of a requiring agency, and the

migration communication terminal for retrieval, respectively, and passes the information showing such distance to the retrieval result creation section 238. Based on the information received from the distance calculation section 237, the retrieval result creation section 238 creates the retrieval result of a predetermined format, and notifies it to the migration communication terminal 210 of a requiring agency through the communications processing section 222.

[0039] The response relation between each means shown below at drawing 1 , drawing 2 , and drawing 4 and each part shown in drawing 6 and drawing 7 is shown. The positional information center 201 shown in drawing 6 is equivalent to the positional information management center 101 shown in drawing 1 . The migration communication terminals 230a, 230b, and 230c which the migration communication terminal 210 shown in drawing 6 was equivalent to the migration communication terminal (requiring agency) shown in drawing 1 , and were shown in drawing 6 are equivalent to the migration communication terminal (retrieval-ed) shown in drawing 1 . Moreover, the service center 220 shown in drawing 6 is equivalent to the service center 110 shown in drawing 1 . The function of the demand reception means 111 shown in drawing 1 is achieved by the communications processing section 222 and the demand reception section 221 which were shown in drawing 6 . Moreover, the function of the positional information collection means 112 shown in drawing 1 is achieved by [ to which it asks and the issuance section 236 operates according to the directions from the service control section 223 ] having prepared for the check processing section 224 shown in drawing 6 , and the inquiry processing section 225 shown in drawing 7 R> 7. Moreover, the distance calculation section 237 with which the retrieval processing section 225 shown in this drawing 7 was equipped is equivalent to the distance calculation means 113 shown in drawing 1 . Moreover, the function of the retrieval result creation means 114 shown in drawing 1 and the report means 115 is achieved by the retrieval result creation section 238 and the communications processing section 222 which were shown in drawing 7 .

[0040] Moreover, it is equivalent to the check processing [ which showed the check means 121 to drawing 6 by accepting ] section 224 with which it prepared for the positional information collection means 112 shown in drawing 2 , and the call means 123 and the voice sending-out means 124 with which this acceptance check means 121 was equipped are equivalent to the communications processing section 222 and the voice messaging section 233, respectively. Moreover, the response detecting element 234 shown in drawing 7 and the acceptance judging section 235 are equivalent to the response judging means 125 shown in drawing 2 . On the other hand, it asks, and the function of a management tool 122 is achieved, when [ which were shown in drawing 2 / which were shown in drawing 7 ] it asks and the issuance section 236 publishes an inquiry according to the directions from the service control section 223.

[0041] Moreover, the address book 212 shown in drawing 6 and a display 213 are equivalent to the address book 103 and the display means 104 which were shown in drawing 4 , respectively. Moreover, in the service processing section 214 shown in drawing 6 , the function of the object information extract means 131 shown in drawing 4 is achieved, when the group information extract section 216 extracts required information from an address book 212 according to the directions from the service request control section 215. Moreover, the function of the retrieval demand means 132 shown in drawing 4 is achieved when the demand messaging section 217 shown in drawing 6 sends out a predetermined message through the radiocommunication processing section 211, and the function of the information reception means 133 shown in drawing 4 is achieved by extracting the information a retrieval result is shown from the information for which the retrieval information extract section 218 shown in drawing 6 was



received by the radiocommunication processing section 211. Moreover, the indicative-data creation section 219 shown in drawing 6 is equivalent to the retrieval result display means 134 shown in drawing 4 . In addition, about each means to constitute the object information extract means 131 shown in drawing 4 , it mentions later.

[0042] Next, actuation of the positional information offer service system shown in drawing 6 is explained. The sequence diagram which expresses actuation of a positional information offer service system to drawing 8 is shown. Moreover, the flow chart which expresses actuation of a service center to drawing 9 is shown. As shown in drawing 8 , whenever it moves to the zone which adjoins across a zone boundary irrespective of whether each migration communication terminal is a retrieval requestor side or it is a searched side in a mobile network, the new location is registered into a home location register.

[0043] When a predetermined carbon button is operated by the user of the migration communication terminal 210 who showed drawing 6 , the service request control section 215 detects this actuation, and it directs the purport which extracts group information which consists of suitable identification information from an address book 212 to the group information extract section 216 while it directs the purport which sends out a predetermined demand message to a service center 220 to the demand messaging section 217.

[0044] According to the directions from the service request control section 215, the group information extract section 216 extracts all the identification information that is in the selection condition in the address book 212 at the event, for example, creates group information which consists of such identification information, and equips subsequent processings with it. Moreover, in an address book 212, if at least one group who consists of two or more identification information is created beforehand, a user can specify the group of the identification information corresponding to a desired person by performing actuation which chooses a desired group with actuation of pushing the predetermined carbon button mentioned above.

[0045] On the other hand, according to the directions from the service request control section 215, the demand messaging section 217 calls a service center 220 through the radiocommunication processing section 211, and transmits a demand message (refer to drawing 8 ). When this demand message is received, the demand reception section 221 of the service center 220 shown in drawing 7 performs reception processing of a service request (step 301 of drawing 9 ).

[0046] In this step 301, if the identification information which shows the user of a requiring agency with a demand message is detected and this identification information and the reception processing section 232 are passed by the demand detecting element 231, based on this identification information, service utilization rating of the user of a requiring agency can be checked by the reception processing section 232. For example, when the application of a location information service is accepted from a user, the identification information which shows the user's migration communication terminal, i.e., the telephone number, is registered into the user list (not shown) and a demand message is received Only when the identification information which the reception processing section 232 received from the demand detecting element 231 with reference to this user list is registered into the user list What is necessary is to receive a location information service and just to require transmission of group information which shows the object for retrieval from the migration communication terminal 210 of a requiring agency (refer to drawing 8 ). And it is received by the communications processing section 222 of a service center 220, and group information transmitted by the migration communication terminal 210 of a requiring agency is passed to the service control section 223 through the demand

reception section 221.

[0047] For example, when the service control section 223 receives group information which consists of identification information which shows the migration communication terminals 230a, 230b, and 230c, the service control section 223 chooses every one identification information contained in this group information one by one, and checks the acceptance volition of the user corresponding to the selected identification information through the check processing section 224 (step 302).

[0048] The flow chart which expresses the actuation which checks retrieval acceptance to drawing 10 is shown. In step 311 shown in drawing 10, the voice messaging section 233 shown in drawing 7 calls the migration communication terminal (for example, migration communication terminal 230a shown in drawing 7) shown by this identification information using the function of reception and the communications processing section 222 in the identification information which is one of the elements contained in group information from the service control section 223 (step 312).

[0049] Then, when a message is received in a partner's migration communication terminal (affirmation judging of step 313), the voice-told message for asking a partner's user about whether the voice messaging section 233 accepts retrieval by the location information service is sent out (refer to step 314 and drawing 8). For example, the voice-told message which directs the purport which operates a carbon button which is different according to whether this retrieval is accepted after clarifying information (number of a gestalt telephone etc.) which specifies the person who is demanding retrieval is created beforehand, and the voice messaging section 233 should just send out this voice-told message to a partner's migration communication terminal using the function of the communications processing section 222.

[0050] After the voice-told message mentioned above is sent out, the response from a partner's migration communication terminal is detected by the response detecting element 234 in predetermined time amount (step 315). When the response shows the purport which accepts retrieval (affirmation judging of step 316), the acceptance judging section 235 judges that retrieval was accepted in the user of a partner's migration communication terminal, notifies that to the service control section 223 (step 317), and ends processing.

[0051] The case (negative judging of step 313) where a partner's migration communication terminal does not answer a call on the other hand, When the response returned when a response was not returned in predetermined time amount (negative judging of step 315) shows the purport which refuses retrieval (negative judging of step 316) The acceptance judging section 235 judges that retrieval was refused by the user of a partner's migration communication terminal, notifies that to the service control section 223 (step 318), and ends processing.

[0052] It judges whether the service control sections 223 were collected corresponding to the identification information which chose the check result which did in this way and was notified from the check processing section 224 in step 302 shown in drawing 9 (step 303), and collected after that the check results about all the identification information contained in group information (step 304). In the negative judging of this step 304, the service control section 223 Return to step 302 and check processing about the following identification information is performed. When the check processing about all identification information is completed (affirmation judging of step 304), on the other hand, the service control section 223 According to delivery and this, an inquiry of positional information is performed in the inquiry issuance section 236 of the retrieval processing section 225 by the inquiry issuance section 236 based on such identification information in required information (step 305).



[0053] At this time, the inquiry issuance section 236 publishes the inquiry about the location of a migration communication terminal shown by reception and such identification information in the identification information by which the purport which accepts retrieval in group information mentioned above with the identification information which shows the migration communication terminal 210 of a requiring agency was checked from the service control section 223 (refer to drawing 8 ), and passes the positional information returned from the positional-information center 201 according to this inquiry to the distance calculation section 237.

[0054] For example, when the purport which accepts retrieval about the migration communication terminals 230a and 230b is checked by check processing mentioned above, the identification information which shows the migration communication terminals 230a and 230b with the identification information of the migration communication terminal 210 of a requiring agency is inputted into the distance calculation section 237. In this case, the distance calculation section 237 passes the distance which computed the distance between the migration communication terminal 210 and the migration communication terminals 230a and 230b, respectively (step 306), and was computed in the retrieval result creation section 238. In addition, about the migration communication terminal (for example, migration communication terminal 230c) by which the purport which accepts retrieval was not checked, the distance calculation section 237 creates the data in which a large distance is shown in 10 minutes, or the code which shows the purport for which it was not able to search, and should just pass it to the retrieval result creation section 238 with the distance calculation result mentioned above.

[0055] The retrieval result creation section 238 creates the retrieval result which shows, respectively whether the migration communication terminal shown by such identification information exists within a predetermined distance from the migration communication terminal 210 of a requiring agency based on the comparison result of the distance computed corresponding to each identification information contained in group information mentioned above, and a predetermined threshold (step 307). The purport to which the migration communication terminal shown by that identification information when the retrieval result creation section 238 has a distance smaller than a predetermined distance computed corresponding to each identification information at this time exists near the migration communication terminal 210 of a requiring agency is shown, and the migration communication terminal to which it corresponds in the case of others creates the retrieval result which shows the purport which does not exist in the neighborhood. In addition, based on the precision of the positional information which can acquire for example, a positional information offer service system etc., the predetermined threshold mentioned above may define a practical value beforehand, and may be fluctuated according to the demand from a user.

[0056] Thus, the created retrieval result is sent out to the migration communication terminal 210 of a requiring agency through the communications processing section 222 (refer to step 308 and drawing 8 ). The retrieval result received by the radiocommunication processing section 211 with which the migration communication terminal 210 was equipped is passed to the indicative-data creation section 219 through the retrieval information extract section 218 shown in drawing 6 , and is processed into a suitable indicative data by this indicative-data creation section 219. Based on the retrieval result mentioned above, corresponding to each identification information contained in group information, this indicative-data creation section 219 creates the indicative data for expressing with a simple notation whether it exists in the neighborhood, and should just pass it to a display 213.

[0057] Thus, in the positional information offer service system shown in drawing 6 , a desired

user can offer the retrieval result which shows whether it exists near the user of a requiring agency according to the demand from a user. In this positional information offer service system, although the user who demands retrieval needs to perform procedure about settlement of the charge of service utilization etc. while registering own identification information into a service center 220 beforehand though natural, he does not need to register the migration communication terminal of a searched side. Therefore, the user of a location information service can investigate whether there is the person near himself irrespective of whether the desired person has registered with service by specifying the identification information which shows the person's migration communication terminal, and requiring retrieval of the service center of a positional information offer service system.

[0058] The positional information of the migration communication terminal to which the user of a migration communication terminal who became an object for retrieval corresponds by the retrieval processing section 225 of a service center 220 on the other hand only within the case where the response which shows the purport that retrieval was understood is returned, in the positional information offer service system shown in drawing 6 is collected. Therefore, since the positional information is not used unless the user of a searched side shows the volition which accepts retrieval, the privacy of the user of a searched side can be protected.

[0059] Moreover, in the positional information offer service system shown in drawing 6, since a voice-told message is sent out in order to check the volition of the user of a searched side, it is not necessary to equip the migration communication terminal of the user of a searched side with a special function. Next, how to check automatically the acceptance volition of the user of the migration communication terminal from which the migration communication terminal for retrieval serves as an object for retrieval on the assumption that it has the function for positional information offer service systems is explained.

[0060] The 2nd operation gestalt of the positional information offer service system which starts this invention at drawing 11 is shown. In addition, in the positional information offer service system shown in drawing 11, about a thing equivalent to the component shown in drawing 6, the same sign as the sign given to the component in drawing 6 is attached and shown, and the explanation is omitted.

[0061] Migration communication terminal 230a shown in drawing 11 is equipped with the acceptance processing section 241, and this acceptance processing section 241 offers the function for suiting a positional information offer service system. In this acceptance processing section 241, the authorization information which becomes the authorization information attaching part 242 from the identification information corresponding to the person who fulfills predetermined conditions is held. Moreover, according to the advice from the message detecting element 243, the acceptance control section 244 directs the purport which sends out the authorization information mentioned above through the radiocommunication processing section 211 to the authorization information attaching part 242 in a service center 220 according to the value of the refusal flag 246. Moreover, the refusal actuation detecting element 245 operates the value of the refusal flag 246 according to the predetermined actuation performed by the user.

[0062] In addition, it is constituted like [ the migration communication terminals 230b and 230c shown in drawing 11 ] migration communication terminal 230a mentioned above. Hereafter, in case the migration communication terminals 230a, 230b, and 230c are named generically, the migration communication terminal 230 is only called. On the other hand, the service center 220 shown in drawing 11 was replaced with the check processing section 224 shown in drawing 6, and is equipped with the check processing section 250 equipped with the authorization



information gathering section 251 and ID collating section 252.

[0063] The authorization information gathering section 251 shown in drawing 11 collects authorization information from the migration communication terminal 230 for retrieval through the communications processing section 222 according to the directions from the service control section 223. The collating processing by ID collating section 252 is presented with the authorization information collected by this authorization information gathering section 251, and this collating result accepts as a response from a user, and is passed to the judgment section 235.

[0064] The response relation between each means shown below at drawing 3 and drawing 5 and each part shown in drawing 11 is shown. The authorization information gathering section 251 shown in drawing 11 is equivalent to the authorization information gathering means 126 shown in drawing 3. Moreover, ID collating section 252 and the acceptance judging section 235 which were shown in drawing 11 are equivalent to the acceptance judging means 127 shown in drawing 3. Moreover, the authorization information attaching part 242 shown in drawing 11 is equivalent to the acceptance list 141 shown in drawing 5. Moreover, it asks and the function of the receiving means 142 is achieved by the radiocommunication processing section 211 and the message detecting element 243 which were shown in drawing 5 and which were shown in drawing 11. Moreover, the function of the selection means 145 shown in drawing 5 is achieved when the refusal actuation detecting element 245 shown in drawing 11 operates the value of the refusal flag 246, and according to the value of the refusal flag 246 mentioned above, the function of the response control means 146 shown in drawing 5 is achieved, when [ showed / to drawing 11 ] it accepts and a control section 244 gives the suitable directions for the authorization information attaching part 242.

[0065] Next, actuation of the positional information offer service system shown in drawing 11 is explained. The authorization information which consists of identification information extracted from the data held at the address book 212 by the user of the migration communication terminal 230 is stored in the authorization information attaching part 242 of the migration communication terminal 230 shown in drawing 11. At this time, the user of the migration communication terminal 230 chooses the identification information which shows the partner who admits retrieval by the location information service one by one in an address book 212, and should just copy each identification information to the authorization information attaching part 242 as one of the elements of authorization information.

[0066] When input means (not shown), such as a push button with which the migration communication terminal 230 was equipped, are operated in a predetermined procedure, moreover, the refusal actuation detecting element 245 shown in drawing 11 When it judged that the purport which refuses retrieval by the location information service was directed, and the refusal flag 246 was operated, the value (for example, logic "1") which shows the purport which refuses retrieval is set up and an input means is operated in another predetermined procedure on the other hand The refusal actuation detecting element 245 judges that the retrieval refusal condition was canceled, operates the refusal flag 246, and sets up the value (for example, logic "0") which shows the purport which admits retrieval.

[0067] In the positional information offer service system shown in drawing 11, like the procedure shown in drawing 8, after the demand from the migration communication terminal 210 is received by the service center 220, check processing mentioned later is performed by the check processing section 250 shown in drawing 11 according to the directions from the service control section 223. The flow chart showing the actuation which checks retrieval acceptance in

the 2nd operation gestalt to drawing 12 is shown.

[0068] The authorization information gathering section 251 shown in drawing 11 receives the identification information which is the element of group information from the service control section 223 like the check processing in the 1st operation gestalt mentioned above (step 311). Moreover, ID collating section 252 receives the identification information of a requiring agency from the service control section 223 at this time. Next, the authorization information gathering section 251 calls the migration communication terminal shown by the identification information received at step 311 through this communications processing section 222 after directing the purport which establishes a speech path between a partner's migration communication terminals by non-singing to the communications processing section 222 (step 321).

[0069] In this case, if a message can be received for the migration communication terminal (for example, migration communication terminal 230a) shown by the identification information mentioned above, a speech path will be promptly formed between this migration communication terminal 230a and service center 220. At this time, the authorization information gathering section 251 transmits the demand message which requires transmission of authorization information instead of the voice-told message shown in drawing 8 through the speech path which progressed to step 322 as an affirmation judging of step 313, and was mentioned above.

[0070] When this demand message is received by the radiocommunication processing section 211 of migration communication terminal 230a shown in drawing 11, the message detecting element 243 accepts the purport that the demand message was detected, and notifies it to a control section 244. Refer to the refusal flag 246 for the acceptance control section 244 first according to this advice. When the purport which admits retrieval is shown by the value of this refusal flag 246, the acceptance control section 244 directs the purport which sends out authorization information to the authorization information attaching part 242. According to these directions, the authorization information attaching part 242 sends out the authorization information which self holds to a service center 220 through the radiocommunication processing section 211.

[0071] In this case, it replaces with the response shown in drawing 8, and authorization information is returned to a service center 220, it is received by the communications processing section 222 with which this service center 220 was equipped, and the authorization information gathering section 251 shown in drawing 11 is passed (step 323 shown in drawing 12). ID collating section 252 shown in drawing 11 collates the identification information of the demand origin received from the service control section 223, and each identification information contained in this authorization information (step 324), and judges whether the identification information of a requiring agency is contained in authorization information (step 325).

[0072] When the judgment result of the purport by which the identification information of a requiring agency is contained in authorization information from this ID collating section 252 is notified (affirmation judging of step 325), the acceptance judging section 235 notifies the purport by which retrieval was accepted in the service control section 223 (step 317), and ends processing. On the other hand, when a partner's migration communication terminal 230 does not answer a call (negative judging of step 313), and when the identification information of a requiring agency is not contained in authorization information (negative judging of step 325), the acceptance judging section 235 notifies the purport by which retrieval was refused to the service control section 223 (step 318), and ends processing.

[0073] thus, the migration communication terminal 230 shown by each identification information shown by group information -- the authorization information beforehand set up by each user can



be collected automatically, without troubling the user of a migration communication terminal who became an object for retrieval by performing check processing about each. And a location information service can be employed, reflecting automatically the intention of the user of a migration communication terminal who becomes an object for retrieval by collecting the positional information of a corresponding migration communication terminal only within the case where the purport which accepts retrieval is checked based on this authorization information.

[0074] Although the retrieval from a certain person is admitted by performing check processing based on this authorization information since the person who thinks that, as for authorization information, a user may accept retrieval in the migration communication terminal 230 is specified as mentioned above, the retrieval by a certain another person can perform automatically fine response of refusing. Since the time and effort which hears a voice-told message by this whenever it is set as the object of retrieval, or answers can be saved, the convenience of the user of a searched side can be improved substantially.

[0075] Furthermore, if the value which shows the purport which refuses retrieval is set to the refusal flag 246 with which the migration communication terminal 230 was equipped by performing predetermined actuation, retrieval by all persons is refusible regardless of the authorization information held at the authorization information attaching part 242. This function is effective to refuse retrieval temporarily although it does not expect for a user to change the authorization information held at the authorization information attaching part 242 to the migration communication terminal 230.

[0076] At the end, the modification of the 2nd operation gestalt mentioned above is explained. The 3rd operation gestalt of the positional information offer service system which starts this invention at drawing 13 is shown. In addition, in the positional information offer service system shown in drawing 13, about a thing equivalent to the component shown in drawing 7 and drawing 11, the same sign as the sign given to the component in drawing 11 is attached and shown, and the explanation is omitted.

[0077] In addition to each part shown in drawing 11, the acceptance processing section 241 is equipped with ID collating section 247 in the migration communication terminal 230 shown in drawing 13. In this acceptance processing section 241, each identification information contained in the authorization information held at the authorization information attaching part 242 is collated by ID collating section 247, respectively in the identification information specified by the directions from the acceptance control section 244, and this collating result is returned to the acceptance control section 244.

[0078] In addition, it is constituted like [ the migration communication terminals 230b and 230c shown in drawing 13 ] migration communication terminal 230a mentioned above. Hereafter, in case the migration communication terminals 230a, 230b, and 230c are named generically, the migration communication terminal 230 is only called. On the other hand, in the service center 220 shown in drawing 13, the check processing section 224 was replaced with the authorization information gathering section 251 and ID collating section 252 which were shown in drawing 11, and is equipped with the judgment demand section 253 and the response detecting element 234. In this check processing section 224, the identification information of a requiring agency is sent out to the migration communication terminal 230 for retrieval by the judgment demand section 253 through the communications processing section 222 according to the directions from the service control section 223 with a predetermined acknowledgement message. Moreover, like the 1st operation gestalt mentioned above, the response returned from the migration communication terminal 230 for retrieval is detected by the response detecting element 234, and is passed to

the acceptance judging section 235.

[0079] Next, actuation of the positional information offer service system shown in drawing 13 is explained. In the positional information offer service system shown in drawing 13, like the procedure shown in drawing 8, after the demand from the migration communication terminal 210 is received by the service center 220, according to the directions from the service control section 223, check processing by the check processing section 250 shown in drawing 11 is performed.

[0080] First, after receiving the identification information which shows the object for retrieval in step 311 shown in drawing 12, it is made to be the same as that of step 321. Call the migration communication terminal 230 shown by this identification information in non-singing mode, and when a message is received Judging whether retrieval is accepted in the migration communication terminal 230 by the judgment demand section 253 instead of sending out an information-requirements message in step 322 with the judgment demand message to demand The identification information which shows the migration communication terminal 210 which is demanding retrieval is sent out to the migration communication terminal 230 through the communications processing section 222.

[0081] In this case, the demand origin with the judgment demand message which asked, changed to the message and was mentioned above shown in drawing 8 is shown, identification information reaches the migration communication terminal 230 of a searched side, and acceptance judging processing later mentioned by the acceptance processing section 241 of this migration communication terminal 230 is performed according to this. The flow chart which expresses acceptance judging actuation to drawing 14 is shown.

[0082] In the acceptance processing section 241 shown in drawing 13, if the judgment demand message and identification information which were received by the radiocommunication processing section 211 are received through the message detecting element 243 (step 331), refer to the refusal flag 246 for the acceptance control section 244 first (step 332). When the value which shows the purport which refuses retrieval is not set to this refusal flag 246 (negative judging of step 333), the acceptance control section 244 directs initiation of delivery and collating processing for the identification information of the demand origin received at step 331 in ID collating section 247.

[0083] According to these directions, ID collating section 247 collates the identification information of the demand origin passed from the acceptance control section 244, and each identification information contained in the authorization information held at the authorization information attaching part 242 (step 334), accepts whether the identification information of a requiring agency is contained in authorization information, and notifies it to a control section 244. When the same thing as the identification information of a requiring agency is contained in authorization information (affirmation judging of step 335), the acceptance control section 244 creates the response of the purport which accepts retrieval, sends it out to a service center 220 through the radiocommunication processing section 211 (step 336), and ends processing.

[0084] When the value which shows the purport which refuses retrieval is set to the refusal flag 246 on the other hand (affirmation judging of step 333), and when the same thing as the identification information of a requiring agency is not contained in authorization information (the negative judging of step 335), the response of the purport which refuses retrieval is created, it sends out to a service center 220 through the radiocommunication processing section 211 (step 337), and an acceptance control section 244 ends processing.

[0085] Thus, in the migration communication terminal 230 of a searched side, when judging

whether retrieval is accepted or not, it is not necessary to open the authorization information the user of a searched side indicates the person to whom retrieval is permitted to be to a service center 220. Since the authorization information a user indicates the person to whom retrieval is permitted to be belongs to this user's privacy, it can strengthen privacy protection of the user of a searched side further by making disclosure of such information unnecessary.

[0086] Each item of further the following is indicated about the above explanation.

(Additional remark 1) In the positional information offer service system which offers the information about whether there is other at least one user specified by the user near a user according to the demand to a service center 110 from a user A service center 110 detects the predetermined demand message of the purport which requires a location information service. A demand reception means 111 to receive the identification information which shows a user's migration communication terminal which should be made for [ which show the migration communication terminal of a user to this user of the demand origin which sent the demand message / identification information and for / of at least one person / retrieval ], A positional information collection means 112 to collect by asking the positional information management center 101 a user's positional information which should be made the user of a requiring agency, and applicable to retrieval based on the information which the demand reception means 111 received, A distance calculation means 113 to compute distance with each user who should consider as the user of a requiring agency, and the object for retrieval based on the positional information collected by the positional information collection means 112, A retrieval result creation means 114 to create the retrieval result these users indicate it to be whether it is near the user of a requiring agency based on the distance computed about each user who should consider as the object for retrieval with the distance calculation means 113, The positional information offer service system characterized by having a report means 115 to transmit the retrieval result created by the retrieval result creation means 114 to the user of a requiring agency.

[0087] (Additional remark 2) As opposed to each user to whom the demand reception means 111 should make the positional information collection means 112 applicable to retrieval based on the information received as information which shows the user who should consider as the object for retrieval from the user of a requiring agency About the user by whom accepting retrieval with an acceptance check means 121 to check whether retrieval is accepted or not, and the acceptance check means 121 was checked, and the user of a requiring agency The positional information offer service system of the additional remark 1 publication characterized by being the configuration equipped with the inquiry management tool 122 which asks the positional information management center 101 positional information, and presents processing of the distance calculation means 113 with the acquired positional information.

[0088] (Additional remark 3) The acceptance check means 121 calls each user's migration communication terminal 102 which should be made applicable to retrieval. A call means 123 to perform processing for a voice call between each migration communication terminal 102 through a network, A voice sending-out means 124 to send out the predetermined voice-told message which urges actuation required in order to check whether retrieval is accepted or not to the migration communication terminal 102 called by the call means 123 to a user, It is based on the response returned from each migration communication terminal 102 called by the call means 123. A positional information offer service system given in the additional remark 2 characterized by being the configuration equipped with a response judging means 125 to judge whether the user of each migration communication terminal 102 accepts retrieval.



[0089] (Additional remark 4) The acceptance check means 121 accesses each user's migration communication terminal 102 which should be made applicable to retrieval through a network. An authorization information gathering means 126 to collect the authorization information which shows the user who is held at each migration communication terminal 102, and permits retrieval. It judges whether about the authorization information corresponding to each user who should consider as the object for retrieval, the identification information which shows the user of a requiring agency is contained. A positional information offer service system given in the additional remark 2 characterized by being the configuration equipped with an acceptance judging means 127 to judge the user corresponding to the authorization information in which the identification information which shows the user of a requiring agency is contained with the retrieval from the user of a requiring agency being accepted.

[0090] (Additional remark 5) In the migration communication terminal equipped with the address book 103 and the display means 104 According to the input of the selection directions including the information which shows the person who should consider as the object for retrieval, from the address book 103 with which the interior of a migration communication terminal was equipped An object information extract means 131 to extract the object information containing the identification information of the migration communication terminal corresponding to the person shown with selection directions, The predetermined demand message of the purport which detects the predetermined actuation by the user and requires a location information service, A retrieval demand means 132 to send out the identification information which shows self, and the object information extracted by the object information extract means 131 to a service center 110, An information reception means 133 to receive the positional information offered from a service center 110 as a response to a predetermined demand message, The migration communication terminal characterized by having a retrieval result display means 134 to display the retrieval result which shows whether there is any person who considers as the object for retrieval near based on the positional information which the information reception means 133 received through the display means 104.

[0091] (Additional remark 6) Group List 135 holding the information which shows the response relation between the information which shows the person to whom the object information extract means 131 belongs to a group for every group [ at least ], and the information registered into the address book 103, A group designation means 136 to choose either of the groups who was held at Group List 135 based on selection directions, The migration communication terminal of the additional remark 5 publication characterized by being the configuration equipped with a read-out means 137 to read the information registered into the address book 103 corresponding to the person belonging to the group chosen by the group designation means 136, and to output as object information.

[0092] (Additional remark 7) The acceptance list 141 holding the authorization information containing the identification information which shows the person to whom retrieval of positional information is permitted in the migration communication terminal equipped with the non-singing arrival function, An inquiry receiving means 142 to receive the inquiry message containing the identification information which carries out non-singing arrival according to the call from a service center 110, and shows a retrieval client, By the collating result by collating means 143 to collate the identification information contained in an inquiry message, and the authorization information held at the acceptance list 141, and the collating means 143 The migration communication terminal characterized by having an acceptance response means 144 to return the response message of the purport to which retrieval is permitted to a service center 110



when [ the identification information which shows a retrieval client ] in agreement with one of the elements of authorization information.

[0093] (Additional remark 8) A selection means 145 to choose whether retrieval of the positional information by the location information service is temporarily refused by detecting the predetermined actuation by the user according to predetermined actuation, or acceptance is resumed. The migration communication terminal of the additional remark 7 publication characterized by having the response control means 146 which forbids temporarily the response to a service center 110 from the response means 144 when refusing retrieval of positional information temporarily with the selection means 145 is chosen.

[0094]

[Effect of the Invention] As explained above, according to the positional information offer service system according to claim 1, according to the demand from a user, the positional information of the user of the request specified by this user can be collected, and service which provides the user of a requiring agency with the retrieval result created based on such positional information can be realized. Since a friend and an acquaintance can provide the user of a migration communication terminal with the information which shows whether it is near its room in a destination, such a location information service is especially considered that convenience is dramatically high for the user in the younger age group.

[0095] Furthermore, service can be employed, giving the alternative about whether retrieval is accepted in the user of a searched side by collecting each user's positional information, and considering the privacy of the user of a searched side, after the user of a requiring agency gets comprehension of other users who specified as an object for retrieval according to the positional information offer service system equipped with the acceptance check means. The clear volition of the user of a searched side can be checked especially about whether retrieval is accepted when the user using the existing migration communication terminal can also consider as the object for retrieval, since it is not necessary to carry the exclusive function towards this positional information offer service system in the migration communication terminal of the user of a searched side when checking the volition of the user of a searched side by the voice-told message. According to the positional information offer service system of a configuration of, collecting automatically the authorization information held at the migration communication terminal of the user of a searched side on the other hand, the user of a searched side can accept only the retrieval from a desired person selectively, without troubling in detail to the voice-told message for checking the retrieval acceptance by the location information service by preparing the authorization information which shows the partner who admits retrieval.

[0096] Moreover, according to the migration communication terminal according to claim 2, the information which shows the object for retrieval extracted from the existing address book can be sent out to the service center of a positional information offer service system, and a user can be provided with the retrieval result received from the service center through the existing display means. When the configuration which extracts one of two or more of the groups especially set as the address book as information which shows the object for retrieval is adopted, actuation of the user of a requiring agency can be simplified dramatically.

[0097] On the other hand, only the retrieval from a desired person can be accepted selectively, without troubling the retrieval acceptance by the location information service in detail to the voice-told message for checking by collating the identification information and authorization information which show the migration communication terminal of a requiring agency in the migration communication terminal of a searched side, and returning the response which shows

whether retrieval is accepted in a service center based on this collating result according to the migration communication terminal according to claim 3. Furthermore, since it becomes possible to refuse retrieval by the location information service temporarily while a user maintains the authorization information set up beforehand as it is by having the function return the response of the purport which refuses retrieval to a service center, according to predetermined actuation, while the user of a searched side maintains the convenience by using the authorization information set up beforehand, own privacy can secure still more firmly.

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[Translation done.]

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## DESCRIPTION OF DRAWINGS

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### [Brief Description of the Drawings]

[Drawing 1] It is the principle block diagram of the positional information offer service system of this invention.

[Drawing 2] It is the principle block diagram of the positional information offer service system concerning this invention.

[Drawing 3] It is the principle block diagram of the positional information offer service system concerning this invention.

[Drawing 4] It is the principle block diagram of the migration communication terminal in connection with this invention.

[Drawing 5] It is the principle block diagram of the migration communication terminal concerning this invention.

[Drawing 6] It is drawing showing the 1st operation gestalt of the positional information offer service system concerning this invention.

[Drawing 7] It is drawing showing the detail configuration of a service center.

[Drawing 8] It is drawing showing the sequence showing actuation of a positional information offer service system.

[Drawing 9] It is a flow chart showing actuation of a service center.

[Drawing 10] It is a flow chart showing the actuation which checks retrieval acceptance.

[Drawing 11] It is drawing showing the 2nd operation gestalt of the positional information offer service system concerning this invention.

[Drawing 12] It is a flow chart showing the actuation which checks inquiry acceptance.

[Drawing 13] It is drawing showing the 3rd operation gestalt of a positional information offer service system.

[Drawing 14] It is a flow chart showing acceptance judging actuation.

### [Description of Notations]

101 Positional Information Management Center

102, 210, 230 Migration communication terminal

103 212 Address book

104 Display Means

110 220 Service center

111 Demand Reception Means

112 Positional Information Collection Means

113 Distance Calculation Means

114 Retrieval Result Creation Means



115 Report Means  
121 Acceptance Check Means  
122 Inquiry Management Tool  
123 Call Means  
124 Voice Sending-Out Means  
125 Response Judging Means  
126 Authorization Information Gathering Means  
127 Acceptance Judging Means  
131 Object Information Extract Means  
132 Retrieval Demand Means  
133 Information Reception Means  
134 Retrieval Result Display Means  
135 Group List  
136 Group Designation Means  
137 Read-out Means  
141 Acceptance List  
142 Inquiry Receiving Means  
143 Collating Means  
144 Acceptance Response Means  
145 Selection Means  
146 Response Control Means  
201 Positional Information Center  
211 Radiocommunication Processing Section  
214 Display  
214 Service Processing Section  
215 Service Request Control Section  
216 Group Information Extract Section  
217 Demand Messaging Section  
218 Retrieval Information Extract Section  
219 Indicative-Data Creation Section  
221 Demand Reception Section  
222 Communications Processing Section  
223 Service Control Section  
224 Check Processing Section  
225 Retrieval Processing Section  
231 Demand Detecting Element  
232 Reception Processing Section  
233 Voice Messaging Section  
234 Response Detecting Element  
235 Acceptance Judging Section  
236 Inquiry Issuance Section  
237 Distance Calculation Section  
238 Retrieval Result Creation Section  
241 Acceptance Processing Section  
242 Authorization Information Attaching Part  
243 Message Detecting Element

244 Acceptance Control Section  
245 Refusal Actuation Detecting Element  
246 Refusal Flag  
247 ID Collating Section  
250 Check Processing Section  
251 Authorization Information Gathering Section  
252 ID Collating Section  
253 Judgment Demand Section

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[Translation done.]

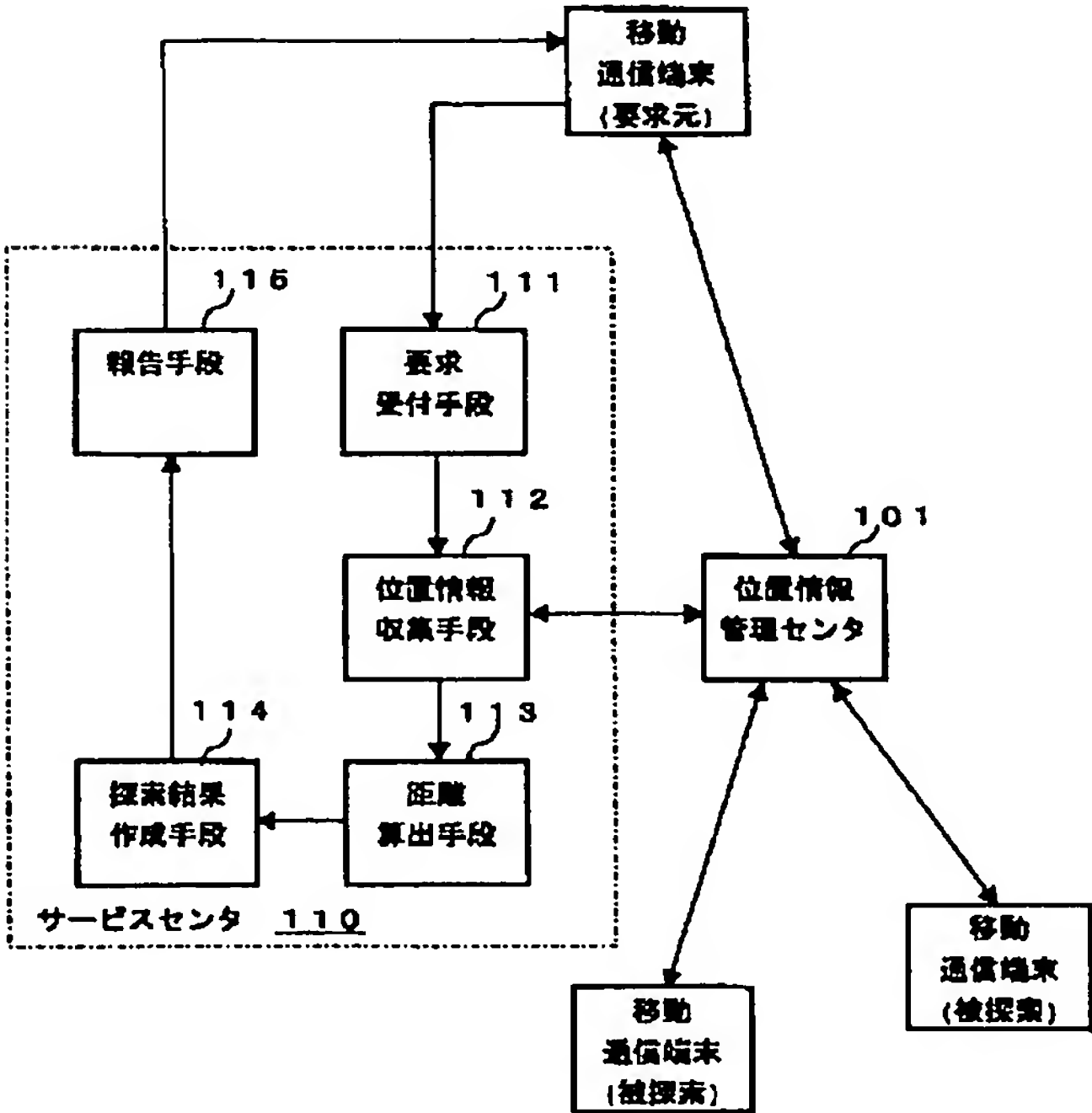
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DRAWINGS

[Drawing 1]

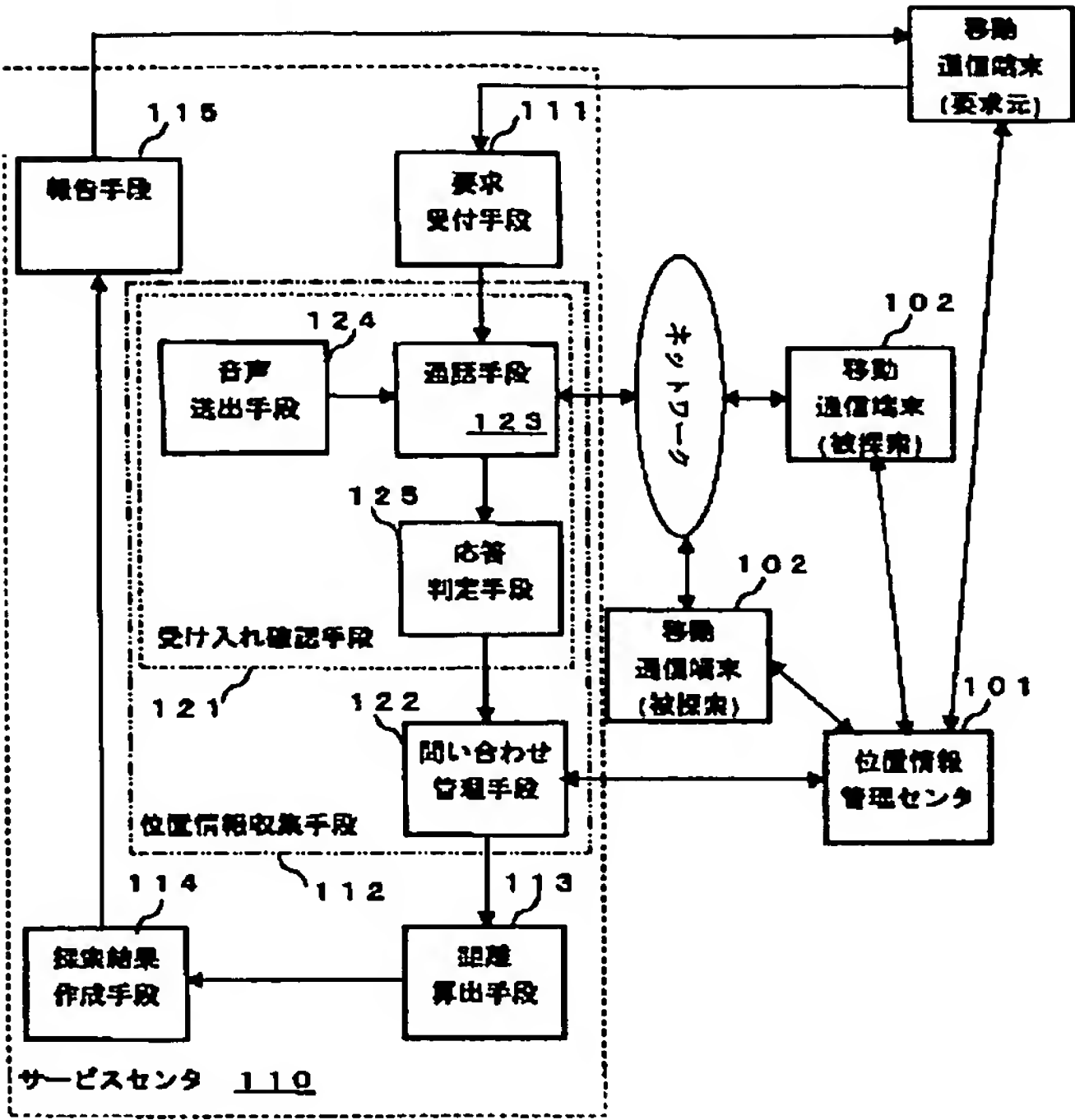
本発明にかかる位置情報提供サービスシステムの原理ブロック図



[Drawing 2]

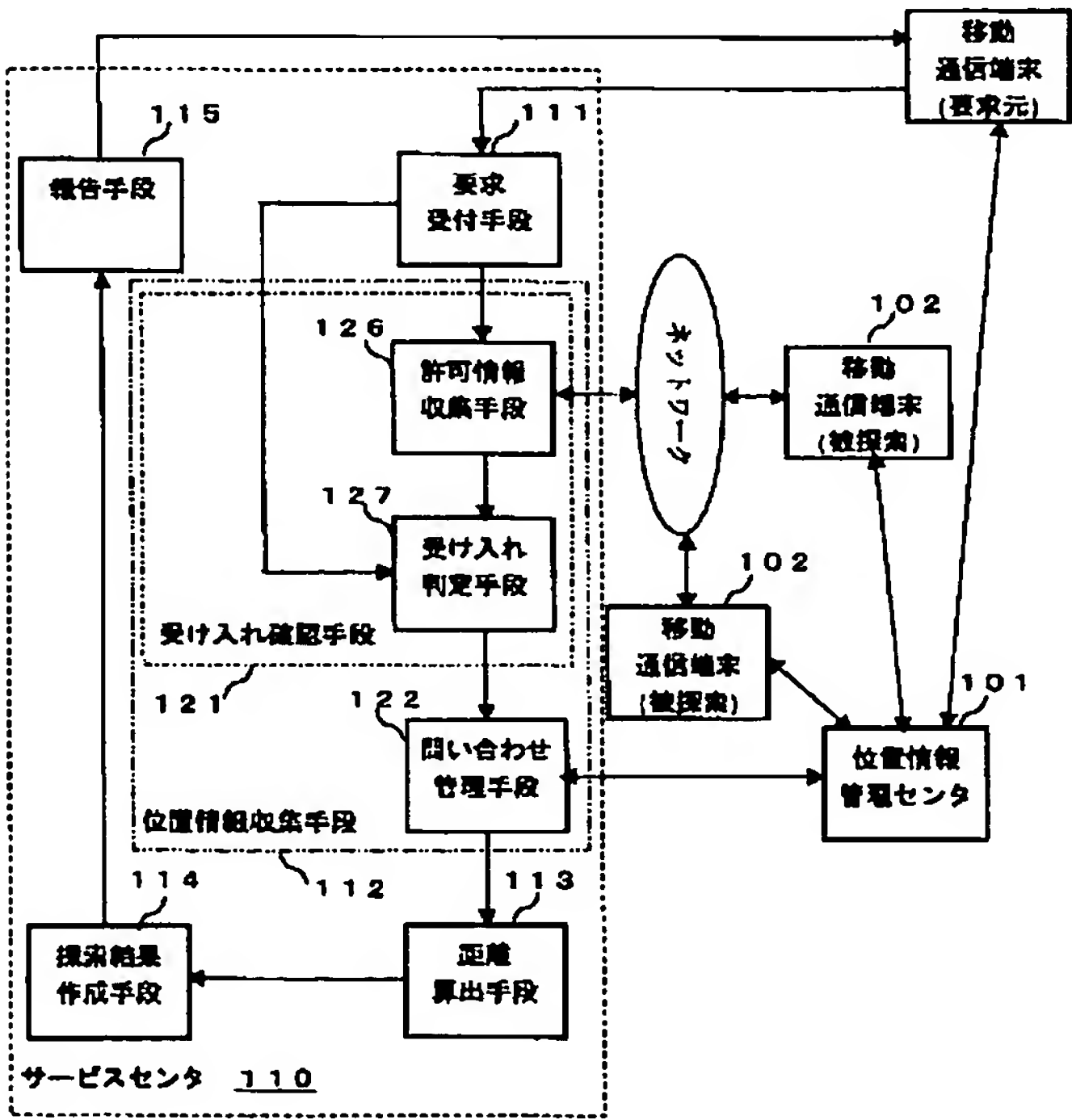


本発明にかかるサービスセンタの処理ブロック図

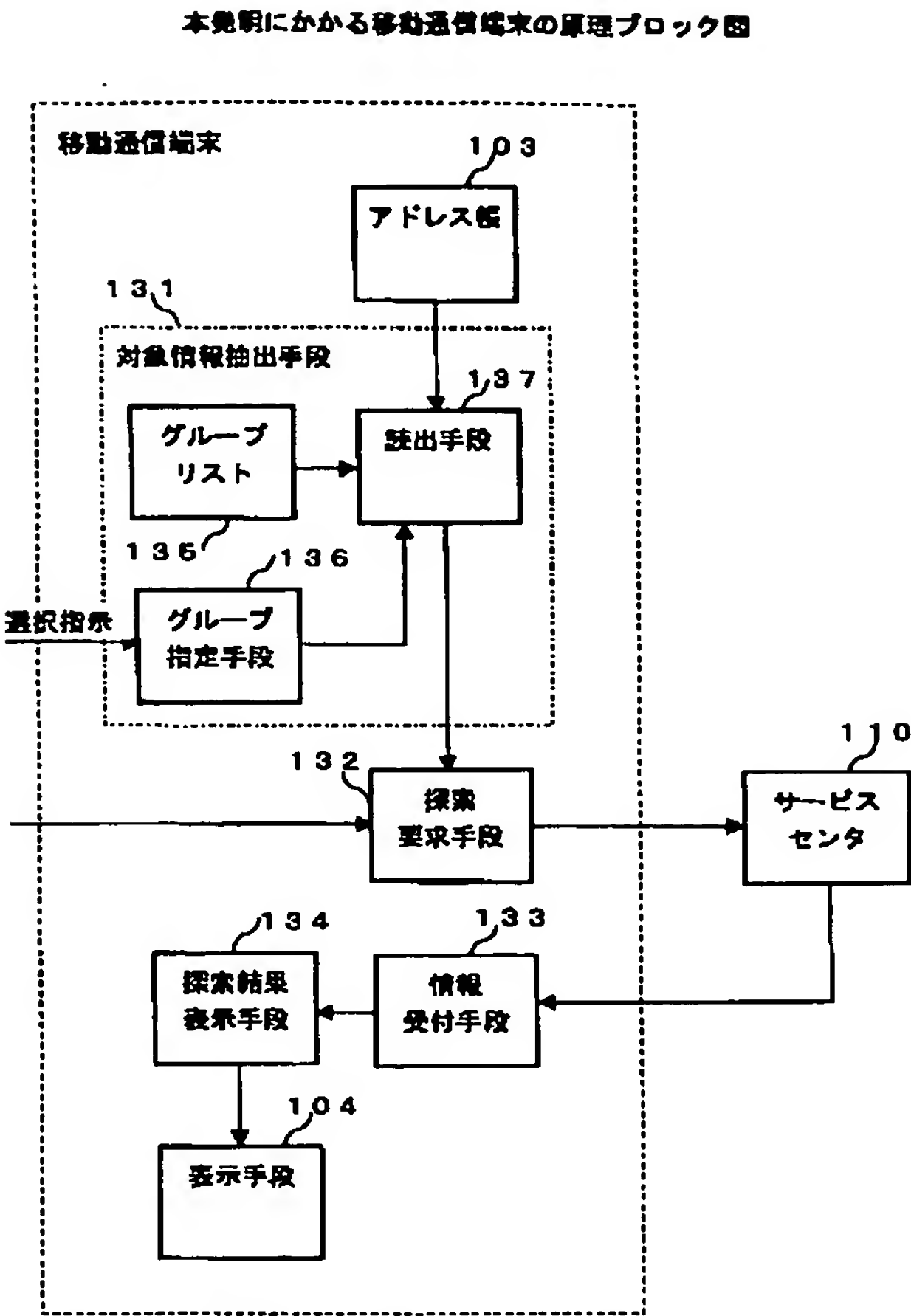


[Drawing 3]

本発明にかかる位置情報提供サービスシステムの処理ブロック図

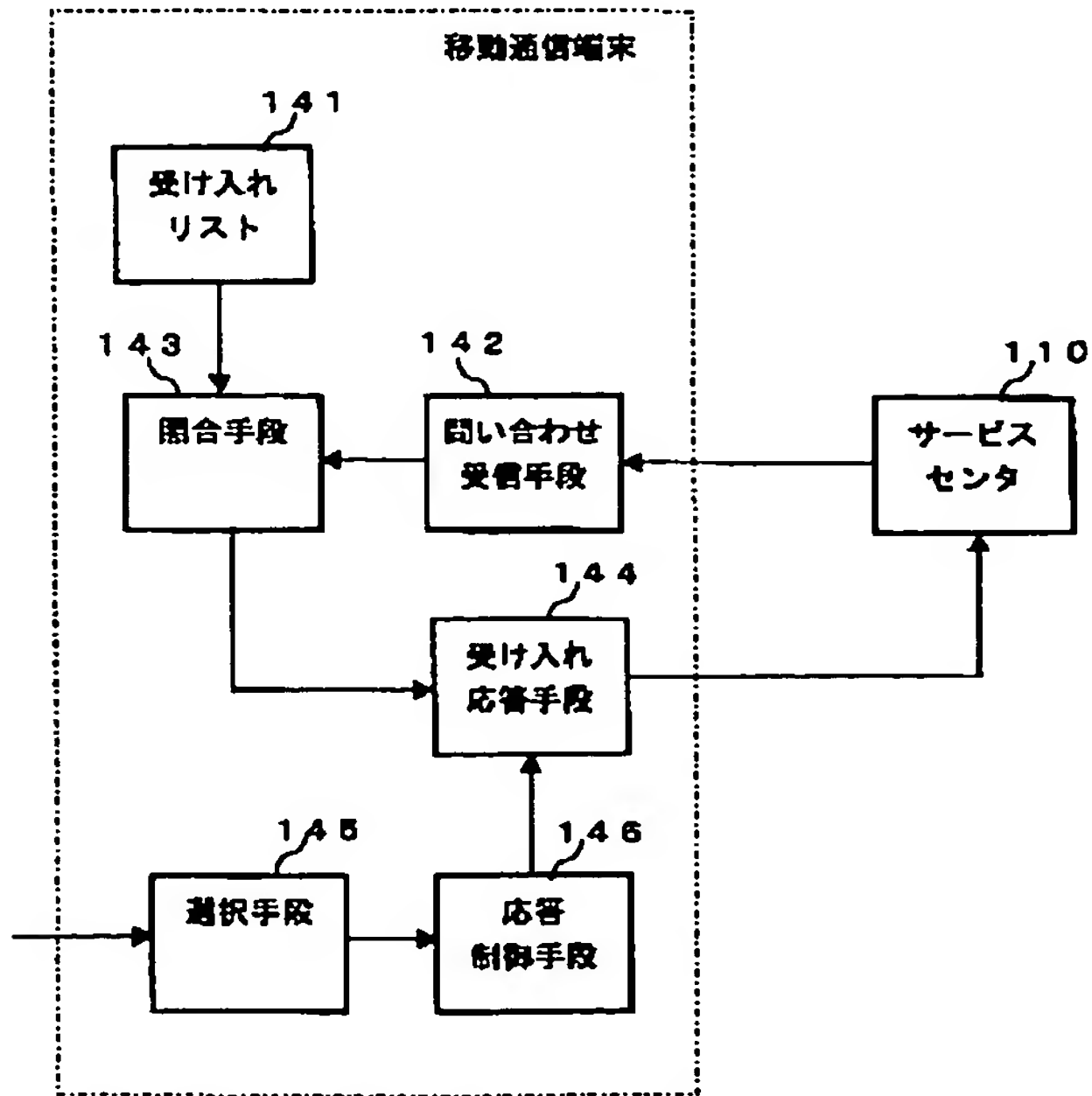


[Drawing 4]

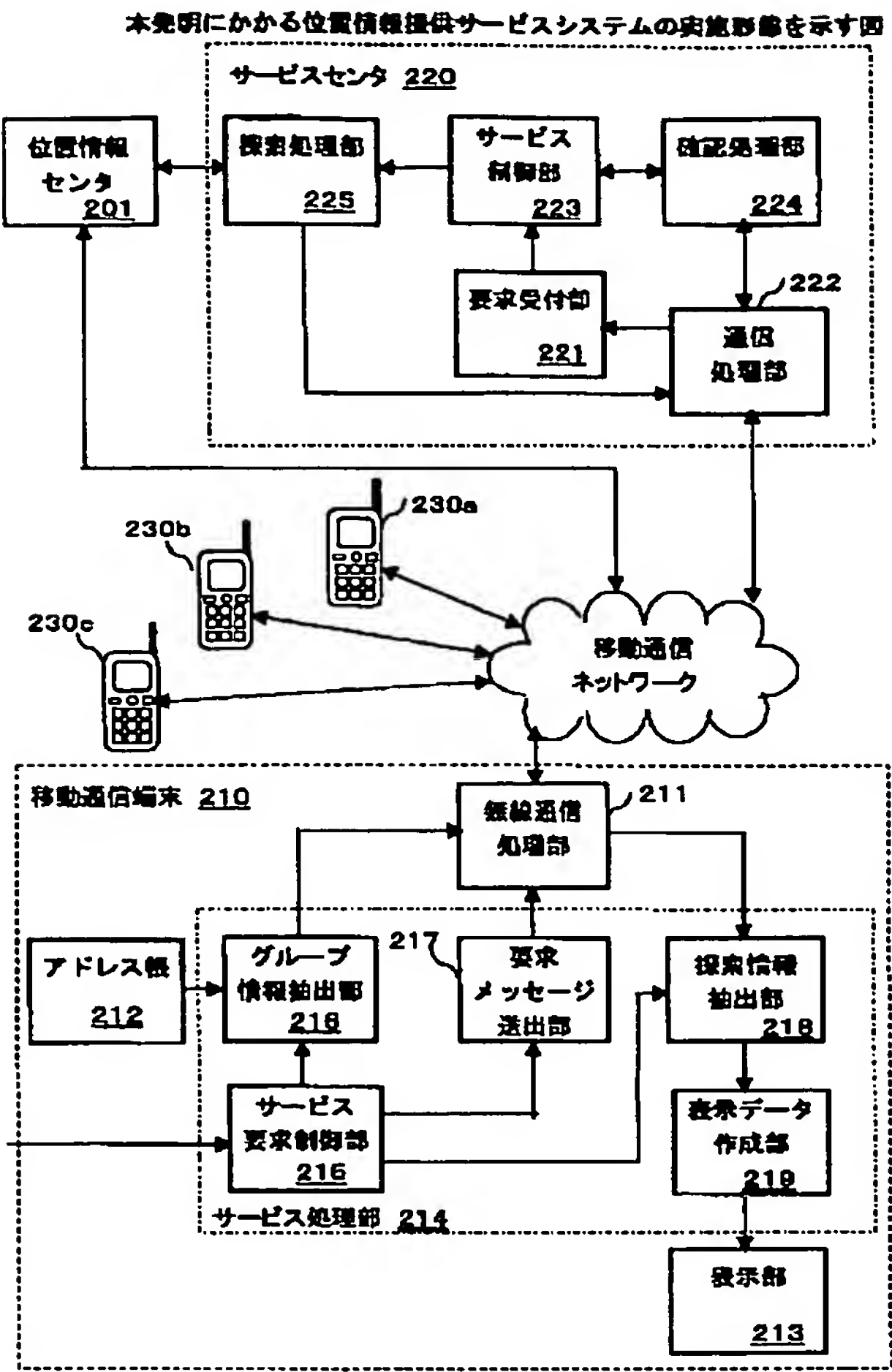


[Drawing 5]

本発明にかかる移動通信端末の原理ブロック図

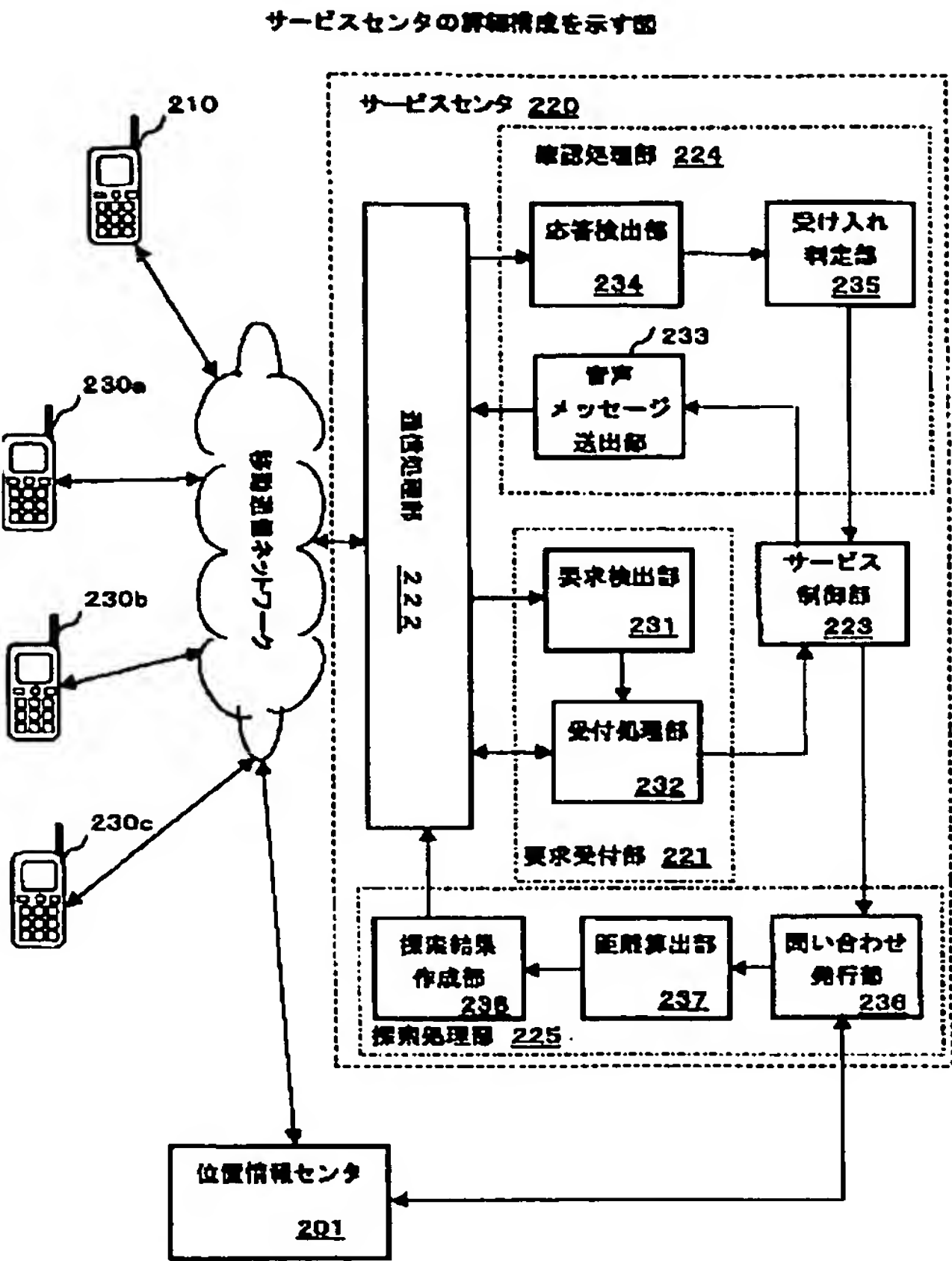


[Drawing 6]



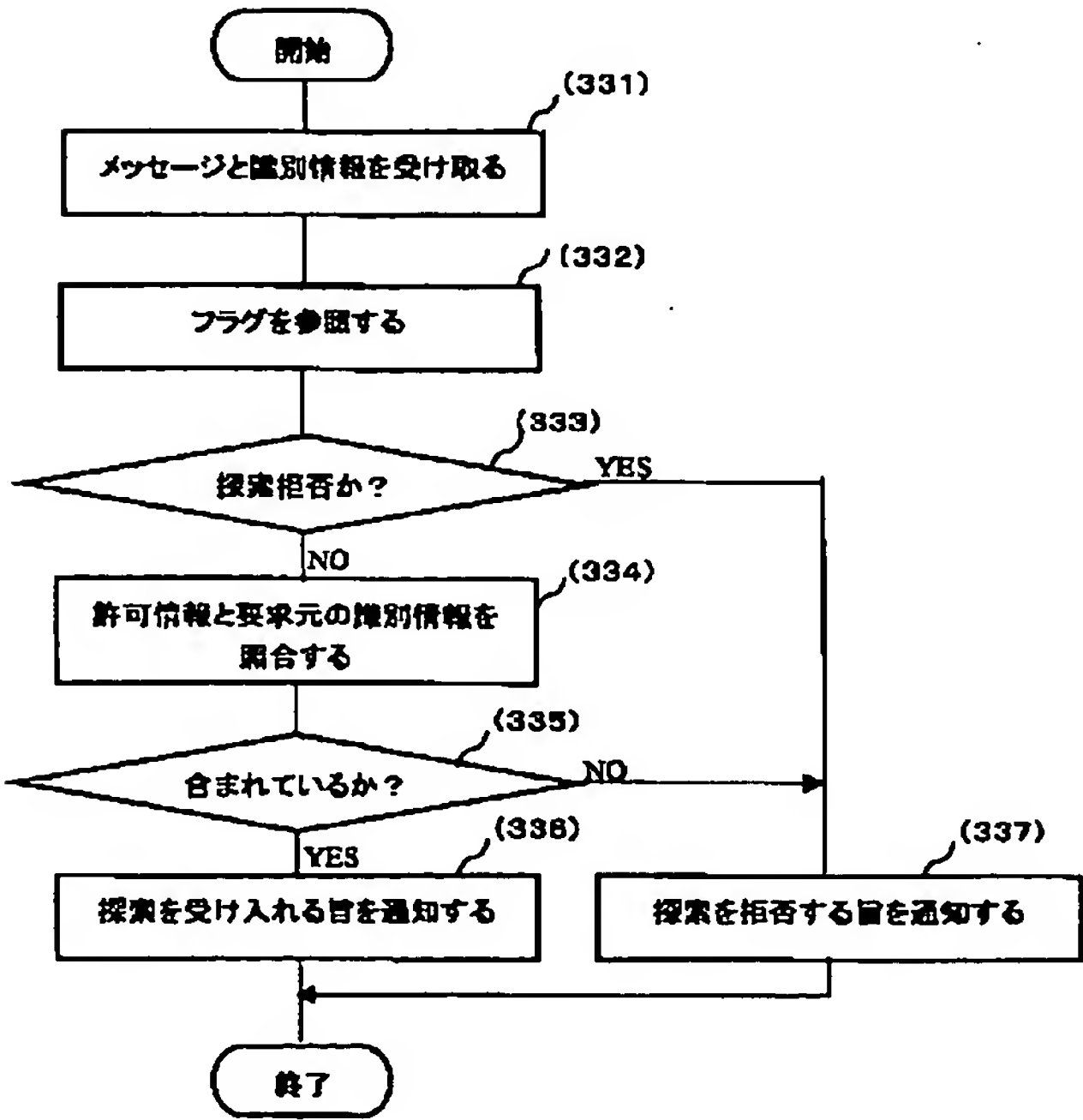
[Drawing 7]





[Drawing 14]

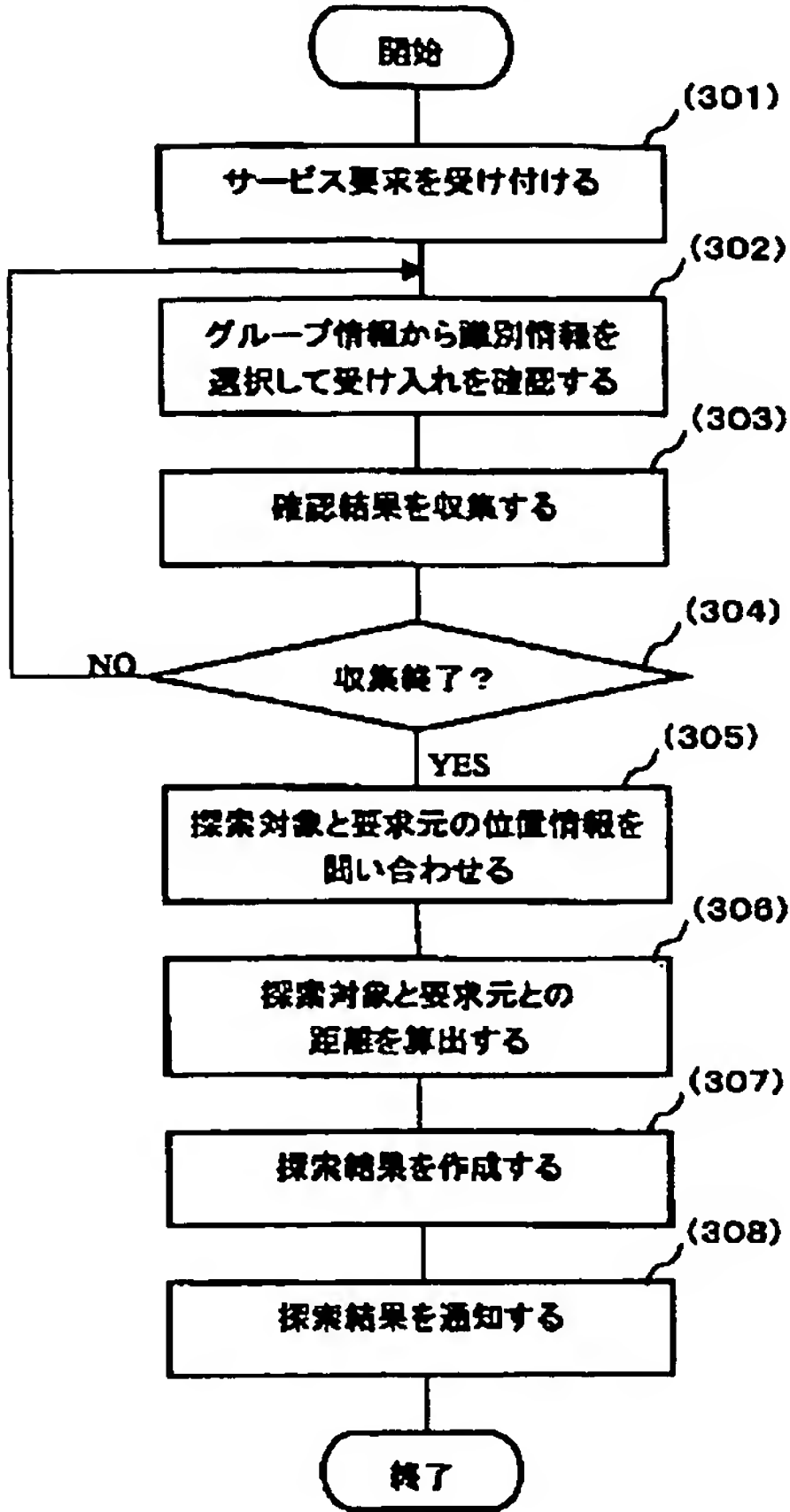
受け入れ判定動作を表す流れ図



[Drawing 8]

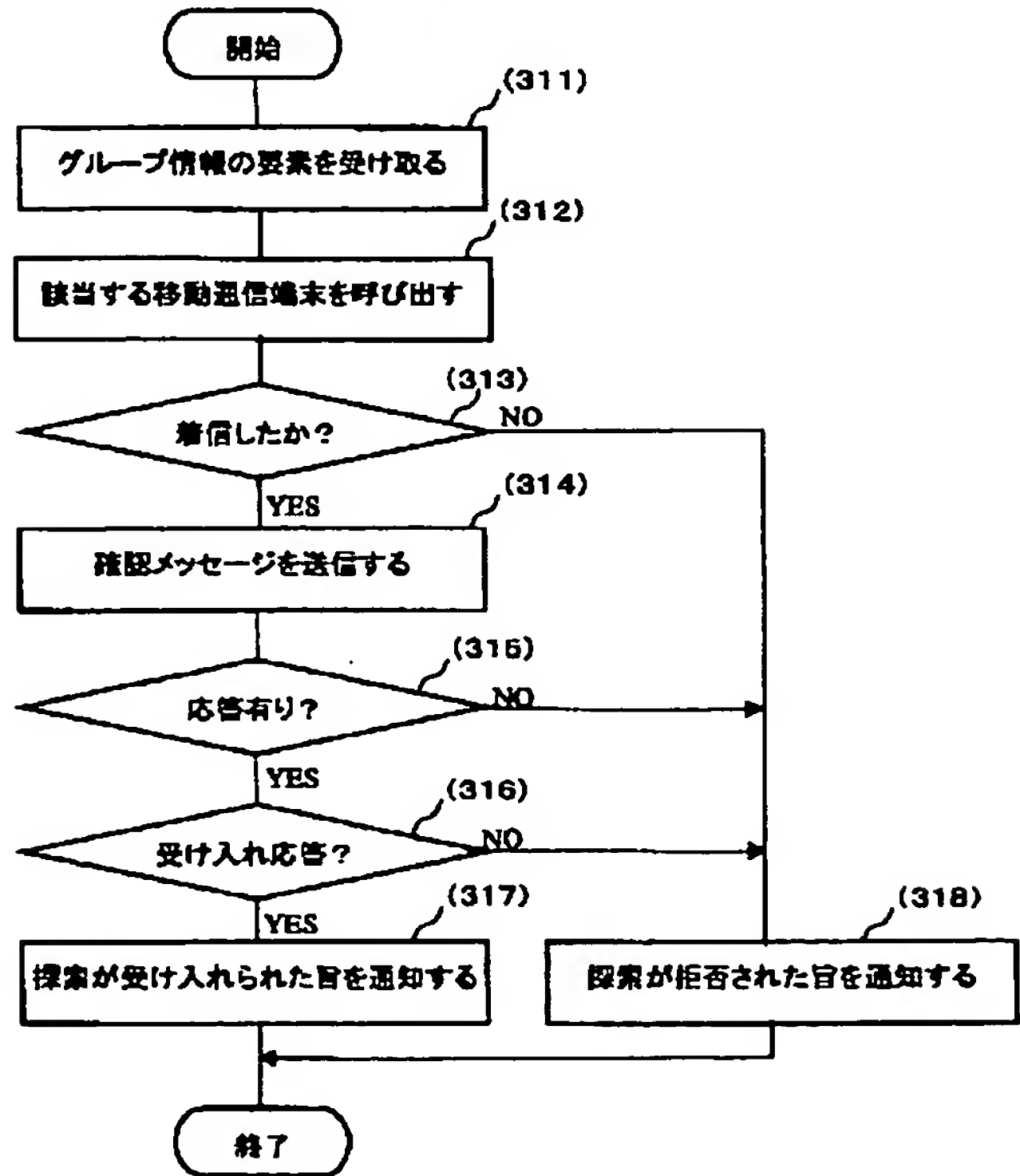


サービスセンタの動作を表す流れ図



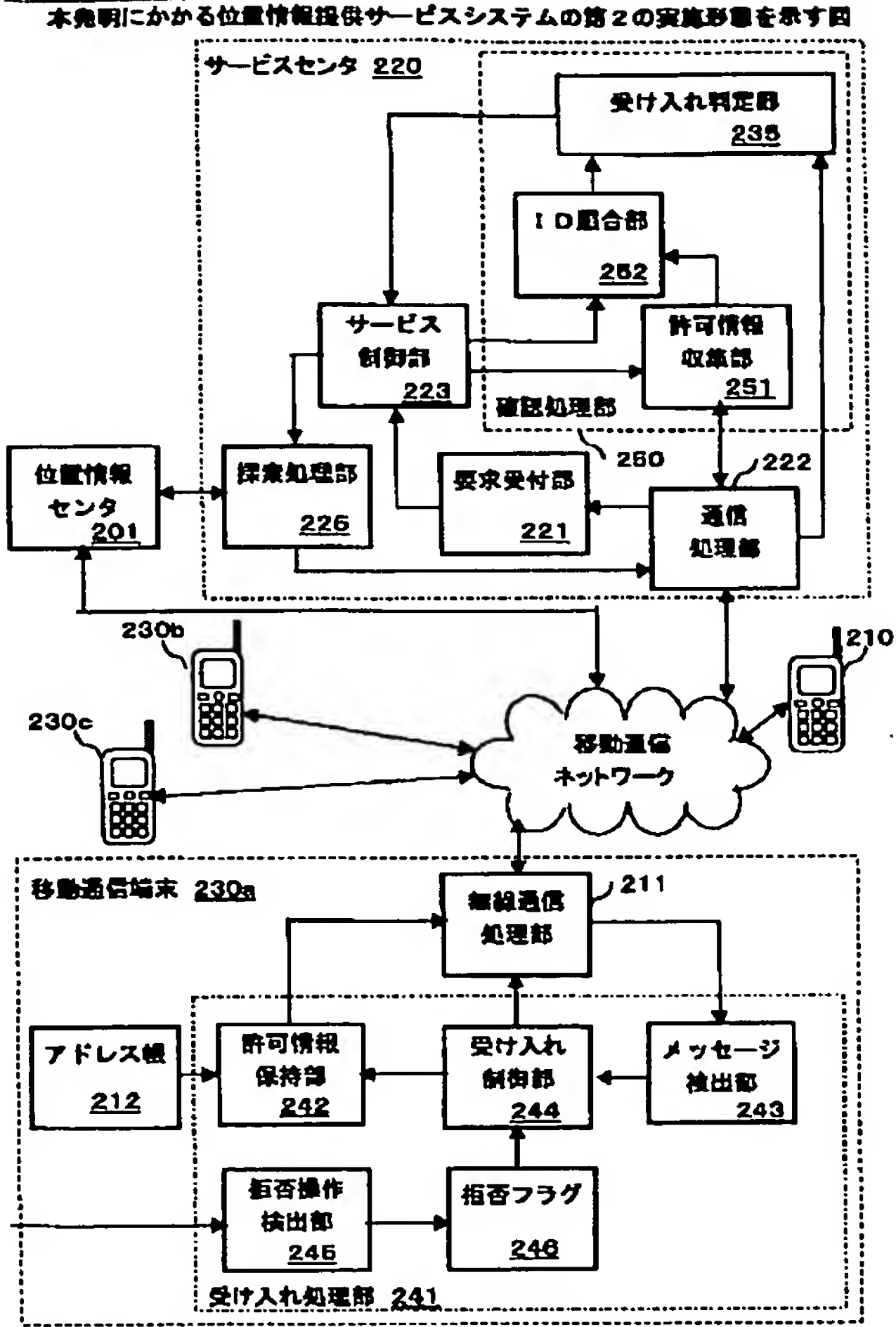
[Drawing 10]

探索受け入れを確認する動作を表す流れ図

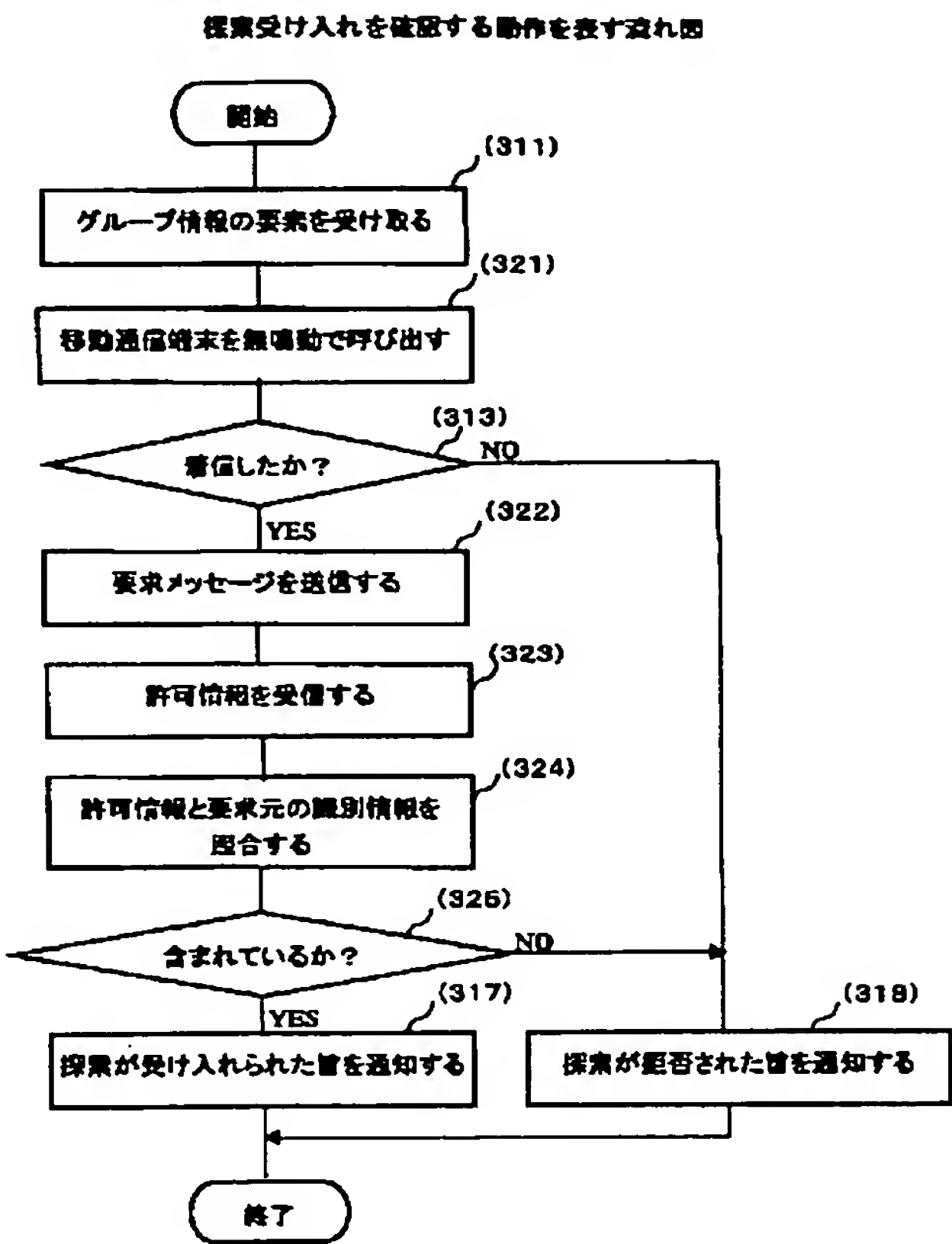




[Drawing 11]

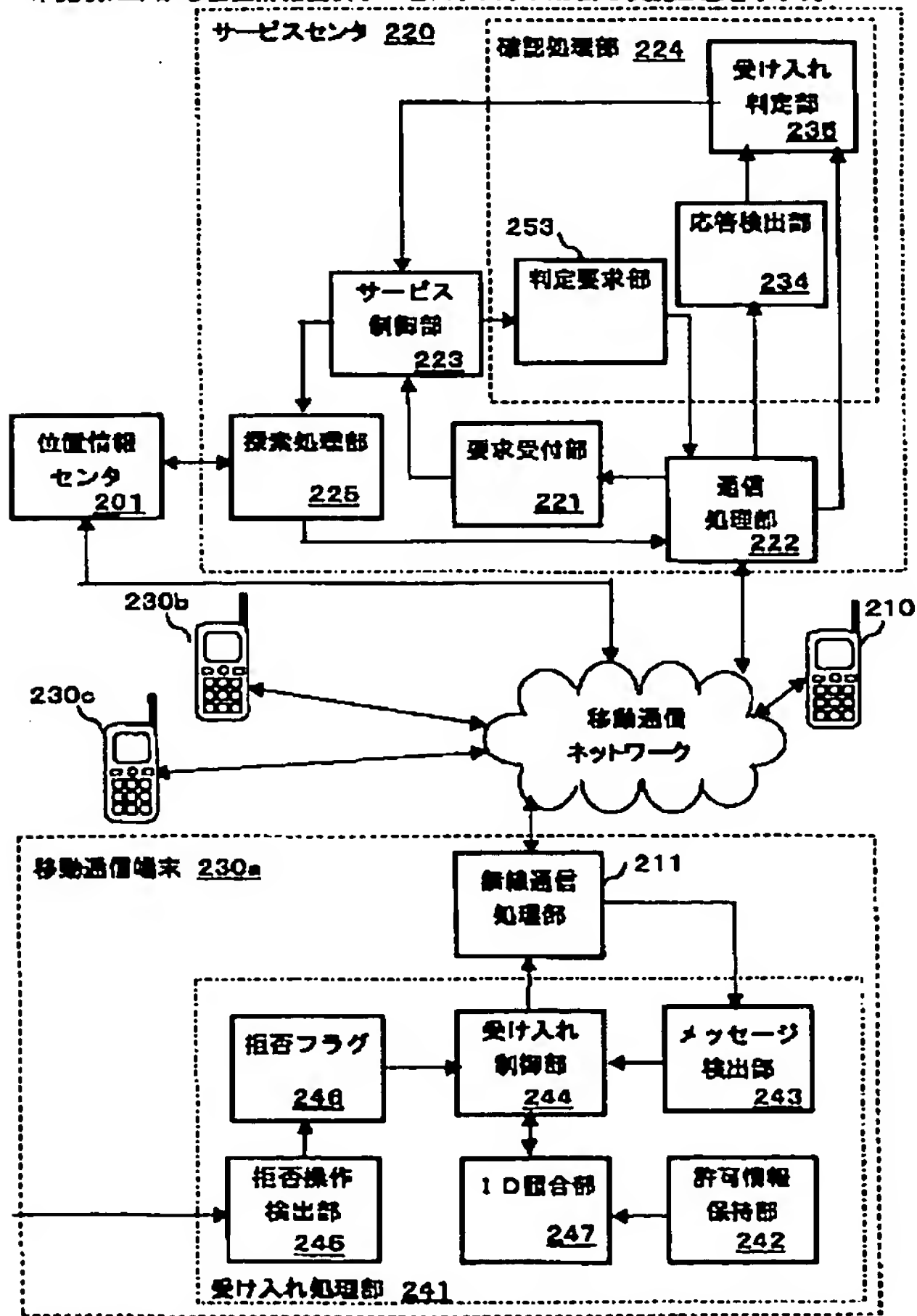


[Drawing 12]



[Drawing 13]

本発明にかかる位置情報提供サービスシステムの第3実施形態を示す図



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[Translation done.]